REPORT

# Semi-Annual Groundwater Monitoring
# First Half 2011
# American Cyanamid Superfund Site

**Wyeth Holdings Corporation**
**Bridgewater Township, New Jersey**

July 2011

O'BRIEN & GERE

4529/47194.210.100

# REPORT

## Semi-Annual Groundwater Monitoring
## First Half 2011
## American Cyanamid Superfund Site

***Wyeth Holdings Corporation***
***Bridgewater Township, New Jersey***


Steven J. Roland, P.E.
Program Director


July 2011

O'BRIEN & GERE

WYETH HOLDINGS CORPORATION, Bridgewater Township, NJ
AMERICAN CYANAMID SUPERFUND SITE

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

FIRST HALF 2011

CERTIFICATION

I certify under penalty of the law that the information provided in this document is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement, which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Russell Downey

Russell Downey[1]
Director of Environmental Engineering, Remediation & Transactions
Pfizer Inc
[1] Designated Signatory – Wyeth Holdings Corporation

Notary:

Maryann Lawton

Sworn to and subscribed
before me this
27 day of JULY 2011

Maryann Lawton
Notary Public
State of New Jersey
My Commission Expires
August 19, 2012

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Wyeth Holdings Corporation
100 Route 206N
M/S 611
Peapack, NJ 07977

**Steven F. Kemp**
Vice President
Wyeth Holdings Corporation
908-901-6558
Steven.F.Kemp@pfizer.com

Wyeth

April 2, 2010

NJ Department of Environmental Protection
Bureau of Federal Case Management
Division of Responsible Party – Site Remediation
401 East State Street, 5th Floor, CN 028
Trenton, NJ 08625

ATTN: Haiyesh Shah, Remedial Project Manager

RE: Wyeth (f.k.a American Cyanamid Co.), Bound Brook, NJ: Administrative Consent Order dated May 25, 1988 and the Amended Consent Order, dated May 5, 1994.

Dear Mr. Shah:

Under Sections 7:14A-4.9 and 7:25C-1.5 of the New Jersey Administrative Code, a corporate officer of at least the level of vice president may delegate the authority to certify monitoring reports and other submissions to a "duly authorized representative" if written authorization is submitted to the lead agency.

On October 16, 2009 Pfizer Inc acquired Wyeth and its subsidiaries, including Wyeth Holdings Corporation. Pursuant to the authority granted to me as vice president of Wyeth Holdings Corporation, I hereby authorize Russell G. Downey, Director of Environmental Engineering, Remediation & Transactions for Pfizer Inc, to act as the duly authorized representative in all matters pertaining to the above-described Administrative Orders, effective immediately.

Please contact Russell G. Downey, at 908-901-6079, if you have any questions regarding this matter.

Sincerely,

Steven F. Kemp

Steven F. Kemp, Vice President
Wyeth Holdings Corporation

cc: Russell G. Downey

Wyeth Holdings Corporation
100 Route 206N
M/S 611
Peapack, NJ 07977

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**Wyeth**

April 2, 2010

USEPA Region II
Superfund Program
290 Broadway, 20th Floor
New York, NY 10007

ATTN: Monica Baussan, Remedial Project Manager

RE: Wyeth (f.k.a American Cyanamid Co.), Bound Brook, NJ: Administrative Consent Order dated May 25, 1988 and the Amended Consent Order, dated May 5, 1994.

Dear Ms. Baussan:

Under Sections 7:14A-4.9 and 7:25C-1.5 of the New Jersey Administrative Code, a corporate officer of at least the level of vice president may delegate the authority to certify monitoring reports and other submissions to a "duly authorized representative" if written authorization is submitted to the lead agency.

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Sincerely,

Steven F. Kemp, Vice President
Wyeth Holdings Corporation

cc: Russell G. Downey

O'BRIEN & GERE
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July 29, 2011

**Mr. Haiyesh Shah**
Case Manager
New Jersey Department of Environmental Protection
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Floor 5W, P.O. Box 420, Mail Code 401-05
401 East State Street, Trenton, New Jersey 08625

**Mr. Mark Austin**
Regional Project Manager
U.S. ENVIRONMENTAL PROTECTION AGENCY
290 Broadway
20th Floor
New York, NY 10007-1866

RE: Semi-Annual Groundwater Monitoring –First Half 2011 Former American Cyanamid Site
Bridgewater Township, New Jersey

FILE: 4529/47194

Gentlemen:

On behalf of Pfizer Inc (Pfizer), enclosed is the First Half 2011 Semi-Annual Groundwater Monitoring Report (GWMR) associated with the Wyeth Holdings Corporation (Former American Cyanamid) site, located in Bridgewater Township, New Jersey. Groundwater monitoring is performed in accordance with the 1988 Administrative Consent Order (ACO) between the American Cyanamid Company (Cyanamid) and the New Jersey Department of Environmental Protection (NJDEP), as amended in 1994. The Bridgewater property comprising the Superfund Site formerly owned and operated by American Cyanamid is now owned by Wyeth Holdings Corporation, a subsidiary of Wyeth. Pfizer acquired Wyeth, the parent company of Wyeth Holdings Corporation, in October 2009. Therefore the legal entity directly responsible for compliance with the Administrative Consent Order executed by American Cyanamid Corporation is Wyeth Holdings Corporation, a wholly-owned subsidiary of Pfizer.

Should you have any questions or comments on the documents provided herewith, please feel free to contact me at 732-225-7380 extension 220.

Very truly yours,
**O'BRIEN & GERE ENGINEERS, INC.**

Angelo J. Caracciolo, III
Senior Project Manager

cc: Mr. Marc Romannel, NJDEP
Mr. Clifford Ng, USEPA
Mr. Russ Downey, Pfizer
Mr. Vince D'Aco, Quantum
Ms. Maureen Hoke, O'Brien & Gere

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# 1. Introduction

This report presents the results of the First Half 2011 semi-annual groundwater monitoring program at the Site (a.k.a. American Cyanamid Superfund Site) in Bridgewater, New Jersey. The monitoring program includes site-wide groundwater pumping and monitoring, as well as the groundwater monitoring requirements for the Impound 8 Resource Conservation and Recovery Act (RCRA) Facility. This report was prepared in accordance with the Administrative Consent Order (ACO) between the American Cyanamid Company (Cyanamid) and the New Jersey Department of Environmental Protection (NJDEP), as amended in May 1994 (ACO Amendment). Pfizer Inc acquired Wyeth, the parent company of Wyeth Holdings Corporation, in October 2009. American Home Products (AHP) changed its name to Wyeth in 2002. The Bridgewater property comprising the Superfund Site formerly owned and operated by American Cyanamid is now owned by Wyeth Holdings Corporation, a subsidiary of Wyeth. Therefore the legal entity directly responsible for compliance with the Administrative Consent Order executed by American Cyanamid Corporation is Wyeth Holdings Corporation, a wholly-owned subsidiary of Pfizer Inc.

## 1.1. Background

In 1982, American Cyanamid began monitoring the site-wide groundwater control system at the facility. The monitoring program was conducted in accordance with the requirements of the 1982 ACO between American Cyanamid and the NJDEP.

The NJDEP issued a final New Jersey Pollutant Discharge Elimination System-Discharge to Ground Water (NJPDES-DGW) Permit # 0002313 for the site on September 30, 1987. The monitoring requirements were increased for this permit by adding analyses and monitoring wells to the site-wide program. In 1988, the NJDEP modified the NJPDES-DGW # 0002313 to include the Impound 8 Facility monitoring requirements.

The Impound 8 Facility program consists of the construction of a permitted RCRA waste management facility for the closure of several on-site lagoons and impoundments. As part of the program, the contents of remaining on-site impoundments may be treated and consolidated in the Impound 8 Facility. This facility includes the areas of former Lagoons 8 and 9. Lagoon 9A has been closed and is incorporated into the groundwater monitoring program at Impound 8. The monitoring program details were presented in the Impound 8 Facility Design Report (BB&L, March 1988), the Impound 8 Facility Ground Water Detection Monitoring Program (GWDMP) Work Plan (BB&L, December 1986, Revised December 1987 and March 1988), and the Implementation Plan (BB&L, March 1988) as part of the RCRA Part B Operating Permit.

In May 1994, an amendment to the ACO (ACO Amendment) between American Cyanamid and the NJDEP was executed. The ACO Amendment incorporates and supersedes the site-wide and Impound 8 groundwater pumping and monitoring requirements (NJPDES-DGW Permit) referred to previously.

In September 1997, AHP requested modifications to the site-wide groundwater monitoring requirements. The modifications were approved by the NJDEP in correspondence dated September 30, 1997. The following table and bullets summarize the currently approved monitoring program:

In July of 1996, a Record of Decision (ROD) was issued by the NJDEP for the Group II Impoundments. Group II includes Impoundments 15, 16, 17, and 18. This ROD included requirements for development and implementation of an overburden groundwater monitoring program. The program was developed and agreed upon as outlined in correspondence to the NJDEP dated March 18, 1997.

On October 22, 2008, in a letter correspondence from NJDEP, reporting requirements were reduced from quarterly to semi-annually. In December 2008, Wyeth requested further modifications to the site-wide groundwater monitoring requirements. The requested modification, reduce sampling to semi-annual sampling, was approved by the NJDEP by e-mail correspondence dated December 30, 2008. Sampling events are now scheduled for April and October each year. The monitoring requirements are summarized in Table 1-1.

Table 1-1 ***Site-wide semi-annual monitoring summary.***

| **Required Monitoring** | |
|---|---|
| **Monitor Wells/Points** | **Analyses** |
| Production wells (PW-2 and PW-3) | Target Compound List (TCL) Volatile Organic Compounds (VOCs)<br>TCL Semi-volatile Organic Compounds (SVOCs), Arsenic<br><br>Extract at least 650,000 gallons of groundwater per day |
| Perimeter bedrock wells (SS, TT, WW, XX, YY, ZZ) | TCL VOCs<br>Arsenic (wells SS, TT and YY only) |
| Impoundment 3, 4 and 5 area overburden wells (28R and MW-2) | TCL VOCs<br>TCL SVOCs<br>Arsenic, cadmium<br>Chlorides (MW-2 only) |
| Impoundment 14 area overburden wells ( 19R, 21R and O-R) | TCL VOCs<br>TCL SVOCs (19R only) |
| Impoundment 17 and 18 (AAA, CCC-R, EEE-R, III, KKK) Note: Wells AAA, CCC-R, EEE-R requirements met under Group II monitoring | TCL VOCs<br>TCL SVOCs<br>Metals<br>Chlorides<br>Radiologicals (CCC-R, EEE- R, and KKK only) |
| Group II overburden wells (AAA, CCC-R, EEE-R, 16MW-2) Note: 16MW-2 analyzed for metals only | TCL VOCs<br>TCL SVOCs<br>Metals<br>Cyanide and phenols |
| Lagoon 6 and 7 and Impoundment 19 and 24 area overburden wells (32-R, 34-R, 38-R, 42-R and TFP-94-1R) Note: 32-R analyzed for VOCs only. | VOCs<br>TCL SVOCs<br>Arsenic<br>Cadmium, chromium, chlorides (38R only) |
| Impoundment 8 wells (RCRA D-1 through RCRA D-15) | TCL VOCs, Total Dissolved Solids (TDS), Total Organic Carbon (TOC), Total Organic Halides (TOX), pH, specific conductance<br>TCL SVOCs, Target Analyte List (TAL) Metals<br>Monthly monitoring of leachate in the detection system with semi- |

| Required Monitoring | |
|---|---|
| **Monitor Wells/Points** | **Analyses** |
| | annual reporting<br>Calculation of the shallow bedrock groundwater flow rate beneath the Impound 8 facility<br>Statistical analysis of specific shallow bedrock groundwater quality parameters between upgradient and downgradient wells |
| Lagoon 9A area wells (RCRA D-12 through RCRA D-15) | Comparison of shallow bedrock groundwater quality in upgradient wells to downgradient wells in the Lagoon 9A area to determine the effectiveness of the Lagoon 9A closure. |
| All wells and staff gauges | Water level measurements<br>Groundwater contour maps<br>Comparison of the groundwater quality to the NJDEP Groundwater Quality Standards |
| **Voluntary Monitoring** | |
| Impoundment 1 & 2 area overburden wells (PZ-12-1, PZ-12-2, PZ-12-3, PZ-12-4, PZ-12-5, PZ-12-6, 01-MW-1, 01-MW-2, 01-MW-3, FLOD-W1S, FLOD-W2S | TCL VOCs<br>TCL SVOCs<br>Metals |
| Main Plant area overburden wells (MW-1A and MW-22R) | TCL VOCs<br>TCL SVOCs<br>Metals<br>Chlorides, Cyanide and phenols |
| Impoundments 1 & 2 area bedrock well (FLOD-W2BS) | TCL VOCs<br>TCL SVOCs<br>Metals |
| Source: O'Brien & Gere | |

In July of 1996, a ROD was issued by the NJDEP for the Hill Property portion of the site. The ROD includes provisions for a Classification Exception Area (CEA) covering the groundwater beneath the Hill Property. This groundwater was monitored by bedrock wells PW-16, PW-17, PW-18, and perimeter bedrock well UU. Low levels of some organic compounds were observed in these wells at the time of the ROD CEA.

The Hill Property monitoring requirements were modified as detailed in the AHP correspondence dated January 8, 1998 and approved by the NJDEP on February 18, 1998. The modifications include the elimination of Hill Property wells PW-17, PW-18, well UU, and well MJ from the site-wide groundwater monitoring program. Groundwater elevations will continue to be measured in well MJ to provide a data point in this vicinity. Groundwater elevations were measured in well MJ until the First quarter 2008 monitoring event. Beginning with the Second quarter 2008 monitoring event measurements were discontinued due to the continued flooding of the well vault and modifications made by the owner that prevented access.

Discontinuation of monitoring of well PW-16 was approved by NJDEP in correspondence dated September 8, 2004, based on VOC results being observed below NJDEP Ground Water Quality Standards (GWQS) for two consecutive events (fourth quarter 2003 and Second quarter 2004). PW-16 continues to be monitored for groundwater elevation.

By letter dated March 17, 2009, NJDEP informed Wyeth Holdings Corporation that it was transferring oversight and regulatory lead of the Site to USEPA and would hold in abeyance the requirements of the NJDEP ACOs, with limited possible exceptions, as long as Respondent implemented the Site investigation and cleanup under USEPA oversight.

As part of the remedial design activities for the anticipated Site-Wide Groundwater Remedy, monitoring of the groundwater in the vicinity of Impoundments 1 & 2 was initiated in the Second quarter 2010. This groundwater monitoring consisted of the collection of groundwater samples, from existing monitoring wells, and the monitoring of groundwater elevations. This monitoring will continue with the semi-annual monitoring until such time that the monitoring program is redefined. Impoundments 1&2 monitoring is included in Table 1-1 above.

## 1.2. Objectives

This report has been developed to document that the following objectives have been met:

- complete the requirements of the ACO Amendment

- monitor the groundwater elevation and/or groundwater quality of the following areas:

  - Perimeter wells
  - Production wells
  - Hill property well
  - Main Plant area
  - Impoundment 3, 4, and 5 areas
  - Impoundment 14 area
  - Group II Impoundment area
  - Lagoons 6 and 7, and Impoundment 19 and 24 areas
  - Impoundments 1 and 2

- monitor the Impound 8 groundwater well network to gauge the effectiveness of the Impound 8 interceptor trench and cut-off wall

- maintain the Impound 8 shallow bedrock groundwater monitoring well network to detect potential releases from the Impound 8 Facility

## 1.3. Report Organization

This report presents the field and laboratory data compiled to fulfill the requirements of the ACO Amendment for the First Half 2011 sampling event. A description of the remaining sections of this report is provided below:

Section 2: Site geology and hydrogeology - provides background information and a discussion of the ongoing site wide groundwater extraction (pumping) program, and provides information specific to the Impound 8 facility.

Section 3: Site-wide semi-annual monitoring - provides groundwater flow and quality information for overburden groundwater in the vicinity of on-site impoundments and main plant, and bedrock groundwater in the perimeter monitoring wells and production wells.

Section 4: Impound 8 semi-annual monitoring - provides a discussion of the overburden, leachate, and the shallow bedrock monitoring activities.

# 2. Site Hydrogeology

There have been a number of groundwater reports developed based upon site research and investigations. A limited listing of relevant reports is provided as Table 2-1. Select information from these studies, and past groundwater monitoring reports, is briefly discussed in the following sections. Further discussion regarding hydrogeology at the site can be found in the Remedial Investigation Report (RIR) for Ground Water (HydroQual, 2006) and the Supplemental (RIR) for Ground Water (HydroQual, 2007), approved by NJDEP and the United States Environmental Protection Agency (USEPA).

The horizontal component of groundwater flow within the overburden deposits is essentially southward toward the Raritan River. Based on Camp Dresser, & McKee (CDM) modeling of the site in 1985 and recent vertical gradient data from some of the multi-level bedrock wells, overburden groundwater in the main plant area tends to flow downward into the underlying bedrock. Pumping of the production wells reduces the piezometric head in the bedrock and induces groundwater flow from the overlying overburden materials toward the production wells. South of a line paralleling the Lehigh-Reading Railroad tracks, the bedrock pumping does not appear to influence overburden groundwater and flow is generally south toward the Raritan River.

Groundwater flow within the Passaic Formation is predominantly a function of Secondary permeability (flow through joints and fractures within the bedrock). Packer test data obtained by CDM (1985 and 1992) indicate two extensive zones of joints and fractures that correlate with the bedding plane jointing and are further categorized as the highly and moderately transmissive zones, separated by zones of more competent bedrock (lower hydraulic conductivity). These zones supply the production wells with their high yield of groundwater and are a principal pathway for groundwater contaminant transport at the site. A third zone (SS conductive zone) was identified by CDM (1985) subcropping south of the Raritan River. The SS conductive zone is not hydraulically connected to the transmissive zones within the plant, and is not influenced by pumping of the production wells. A subvertical fracture trending northwest through the main plant was identified by CDM (1992) in production test wells TW-2 and TW-3 which are located in the main plant and correlates with the near vertical joint pattern discussed in Section 2.2. The results of a 72-hour pump test performed in test well TW-2 showed that the subvertical fracture zone is hydraulically connected to the highly and moderately transmissive zones identified by CDM in 1985. TW-2 and TW-3 have since been designated as PW-2 and PW-3, and have been pumping as replacement production wells since March 23, 1994.

As part of the production well startup, monitoring of the replacement wells PW-2 and PW-3 for a period of 30 days showed improved hydraulic containment in the main plant and portions of the impoundment areas. This is described in the "Final Summary Report, Start-up of Production Wells PW-2 and PW-3" dated August 1994 (CDM). Further, horizontal hydraulic gradients between the main plant and the former production wells on the Hill Property have been reversed, with groundwater flow now being toward the main plant from the former production wells.

In the southern portion of the site (south of the Lehigh Valley Railroad tracks), the major controlling feature is the Raritan River which acts as a regional groundwater discharge zone. Areas indicative of discharge to the Raritan River are generally characterized by a natural upward hydraulic gradient as observed in the multiport well SS (HydroQual, 2007).

The zone of influence created by the production well pumping encompasses the main plant portion of the site. Groundwater elevation contour mapping (Figure 3-4) has shown an east-west elongation in the zone of influence, caused by the orientation of the highly and moderately transmissive zones, the apparent termination of the subvertical fracture zone within the main plant, and the distribution of monitoring wells. The portion of the site south of the Lehigh-Reading Railroad tracks, however, was identified as an area where production well influence is limited (CDM 1985 and HydroQual, 2007).

In response to the 12 May 2011 USEPA comments on the hydrogeological conceptual site model (CSM) described in the Site-wide Feasibility Study, an updated hydrogeological CSM will be described and included in the revised Site-wide FS to be submitted to USEPA and NJDEP in August 2011. Therefore, interpretation of some of the figures in this report (e.g. overburden groundwater elevation plan and water table map) are subject to change.

# 3. Site-Wide Semi-Annual Monitoring

Overburden groundwater elevations and groundwater quality are monitored in areas of the site as specified by the ACO Amendment and the ROD for the Group II Impoundments. The locations of the site-wide overburden monitoring wells are shown on Figure 3-1.

The bedrock system, as specified by the ACO, is currently monitored by 19 bedrock wells, as shown on Figure 3-2.

On March 23, 1994, groundwater pumping for production was switched from former production wells PW-16, PW-17, and PW-18 to wells PW-2 and PW-3 under a program approved by the NJDEP.

The ACO requires groundwater to be pumped at a minimum weekly average of 650,000 gallons per day. The site production well pumping information for the First Half 2011 is provided as Table 3-1. Pumping volumes from the Second quarter 1988 through the First Half 2011 are provided on Table 3-2. The volume of water treated during the First Half 2011 was 119,941,330 gallons, and the total volume of groundwater treated since July 1988 is 5,573,000,000 gallons. The volume of water treated during the First Half 2011 was provided by Woodard and Curran, which conducts the Operation and Maintenance at the site.

## 3.1. Overburden Water Level Measurements

Site-wide overburden groundwater elevation measurements were obtained on April 25 and 30, 2011. The elevation data and changes in elevations from April 25 and 30, 2011 to the last report are presented in Table 3-3.

An overburden groundwater elevation contour map has been prepared for the Main Plant area and is provided as Figure 3-3. The following provides a description of the groundwater elevation data for each of the four areas required to be monitored by the ACO.

### 3.1.1. Impoundment 3, 4, and 5

Wells 28-R, MW-2, MW-3, MW-5, MW-7, and MW-9 are monitored for the Impoundment 3, 4 and 5 areas (Figure 3-3). The groundwater flow direction in this area for the First Half 2011 monitoring event is generally to the south with flow potentials converging in the vicinity of well MW-2. This groundwater pattern is similar to historical flow patterns. The change in groundwater elevations in this area is consistent with previous data.

### 3.1.2 Impoundment 14

The groundwater flow direction in the area of Impoundment 14, as monitored by wells 19R, 21R, and O-R, indicates a southerly hydraulic gradient away from Cuckolds Brook, towards the center of the plant, which is consistent with previous findings (Figure 3-3). The change in groundwater elevations is consistent with previous data.

### 3.1.3 Group II Impoundment

The groundwater flow direction in the area of the Group II Impoundments, monitored by wells AAA, CCC-R, EEE-R, and 16MW-2, is generally to the south across the Group II Impoundments (Figure 3-3). The change in groundwater elevations is consistent with previous data.

### 3.1.4 Lagoon 6 and 7 and Impoundment 19 and 24

Elevation changes for the Lagoon 6 and 7 and Impoundments 19 and 24 areas are consistent with historic data. Monitoring well 32-R, located in the northwest portion of Lagoon 7, was obstructed and not gauged during this monitoring event. The obstruction was removed and the well will be gauged for future monitoring events.The current groundwater elevations in wells 34-R, 38-R, 42-R, and TFP-94-1R, indicate mounding beneath Lagoon 7 with a portion of groundwater flow directed to the southwest toward the Raritan River, and a portion directed to the northeast toward Cuckold's Brook, which is similar to historic groundwater flow patterns (Figure 3-3).

### 3.1.5 Impoundments 1 and 2

The groundwater elevations in the Impoundments 1 and 2 area are monitored by piezometers PZ-12-1, PZ-12-2, PZ-12-3, PZ-12-4, PZ-12-5 and wells 01-MW-01, 01-MW-02, 01-MW-03, FLOD-W1S, and FLOD-W2S. Groundwater flow is generally to the south (Figure 3-3), which is similar to the previous groundwater flow pattern. groundwater

Groundwater elevations and flow, evaluated during the Second Half 2010 monitoring event, Remedial Investigation (Hydroqual, 2006) and Supplemental Remedial Investigation (Hydroqual, 2007), also indicate a groundwater flow generally to the south and groundwater elevations are comparable to this First Half 2011 semi-annual groundwater monitoring event.

Additional sampling and associated data will be collected in the vicinity of Impoundments 1 and 2 and will be incorporated in to the Second Half 2011 Monitoring Program as a result of the Settlement Agreement and Order on Consent for Removal Action executed between WHC and USEPA on 19 July 2011.

## 3.2. Bedrock Water Level Measurements

Bedrock water level measurements obtained on April 25, 2011 are presented in Table 3-4. Between the third quarter 2005, and fourth quarter 2005 bedrock wells SS, TT, WW, XX, YY, ZZ, EEEE, FFFF, and GGGG were retrofitted with FLUTe® liners with discrete monitoring ports. The FLUTe® system is composed of several ports that target discrete flow zones. FLUTe® procedures are provided in Appendix A. Table 3-4 also provides a summary of the monitoring port elevations and their associated groundwater elevations. Prior to the FLUTe® liner installations, historical measurements were representative of average groundwater elevations of the entire open interval in each well. Since the groundwater elevations obtained from the bedrock wells in which FLUTe® liners were installed are representative of discrete flow zones, comparison of these elevations with historic elevations prior to FLUTe® liner installation is not appropriate. Groundwater elevation measurements from each port have been compared to previous FLUTe® measurements. For consistency, the remaining bedrock wells (AAAA, BBBB, CCCC, DDDD, IIII, and JJJJ) without FLUTe® liners have been compared to historical measurements. Groundwater elevations and the changes in elevations from the previous monitoring event are presented in Table 3-4.

Flowing artesian conditions were observed at monitoring points IIII-D and JJJJ-D during the monitoring events from the fourth quarter 2006 through the third quarter 2007, and from the First quarter 2008 through the First Half 2010. Starting with the Second quarter 2008, wells IIII-D and JJJJ-D were temporarily modified by attaching a temporary casing extension to each of the wells prior to water depth gauging. Each temporary casing used is permanently designated to the well in order to preserve accurate measurements. The new top of casing elevation is calculated by adding the length of temporary casing to the surveyed elevation.

A bedrock groundwater contour map, prepared using groundwater elevations from wells PW-2, PW-3, PW-16, SS (Port 1), TT (Port1), WW (Port 1), XX (Port 1), YY (Port 3), ZZ (Port 1), AAAA-S, BBBB-

S, CCCC-S, DDDD-O, EEEE (Port 4), FFFF (Port 3), GGGG (Port 2), IIII-S, and JJJJ-O, is provided as Figure 3-4.

Wells and FLUTe® ports used to produce the contour map were selected to represent the upper moderately conductive zone. Wells that did not have screens that intersected the upper moderately conductive zone including SS (Port 1), WW (Port 1), XX (Port 1), ZZ (Port 1), AAAA-S, CCCC-S, GGGG (Port 2), IIII-S, and JJJJ-O were selected based on screen depth that most closely correlated in depth to adjacent wells that had a screen that did intersect the zone.

### 3.2.1. Production Wells

Groundwater elevations and the elevation changes in the production wells (PW-2 and PW-3) from the previous monitoring event are presented in Table 3-4. The production well zone of influence, based on the April 25, 2011 groundwater elevations appears to be similar to the zone of influence observed at these locations during previous events (Figure 3-4). Groundwater elevation from production well PW-3 was not measured during the First Half 2011 monitoring event due to well site accessibility.

### 3.2.2. Perimeter Wells

Groundwater elevations and the elevation changes in the perimeter bedrock wells (SS, TT, WW, XX, YY, and ZZ) from the previous monitoring event are presented in Table 3-4.

### 3.2.3. Main Plant

Groundwater elevations and the elevation changes for the Main Plant bedrock wells (AAAA, BBBB, CCCC, DDDD, EEEE, FFFF, GGGG, IIII, and JJJJ) from the previous monitoring event are presented in Table 3-4. The vertical gradients noted in the Main Plant wells are the result of varying degrees of hydraulic communication between the transmissive zones at various well locations due to pumping of the production wells. Vertical gradients noted at wells IIII and JJJJ, located within the Raritan River floodplain, suggest groundwater discharge to the Raritan River from the deep bedrock.

As mention in Section 2, Site hydrogeology, an updated hydrogeological CSM will be described and included in the revised Site-wide FS to be submitted to USEPA and NJDEP in August 2011. Therefore, certain hydrogeologic interpretations presented in this report are subject to change.

## 3.3. Overburden Groundwater Quality

In a letter dated October 11, 2005, NJDEP accepted the use of passive diffusion bags (PDBs) for volatile organic compound (VOC) sample collection from the overburden monitoring wells sampled as part of the monitoring program. Based on this acceptance, PDBs were installed on April 7, 2011 in the overburden monitoring wells to be sampled during the First Half 2011 monitoring event. Installation and sampling procedures for PDBs are provided in Appendix A. A PDB specification summary table and checklists for the submission of sampling data for PDBs are provided in Appendix B.

Accutest Laboratories, Inc. of Dayton, New Jersey (Accutest) collected groundwater samples between April 27 and May 13, 2011from Impoundment 3, 4, and 5, Impoundment 14, Group II impoundment, and Lagoon 6 and 7 and Impoundment 19 and 24 and between May 18 and 19, 2011 for Impoundments 1 & 2. Well 32-R was sampled on May 13, 2011 after an obstruction was cleared. Accutest (NJ Certification No. 12129) also performed laboratory analysis of the groundwater samples.

Measurements of specific conductance, pH, temperature, dissolved oxygen, and turbidity were recorded in the field. These data are presented in Appendix B. Trend graphs for constituents historically and currently detected in samples during monitoring at the site are included in Appendix C. The groundwater analytical data is provided in Tables 3-5, 3-6, 3-7, and 3-8. The data were reviewed in accordance with NJDEP procedures. These data were evaluated using the NJDEP Electronic Data Systems Application Checker program and no errors were evident. A data validation review is provided in Appendix D.

The concentrations of chlorobenzene and toluene in the upper portion of monitoring well MW-2, which decreased to their lowest concentration during the Second Half 2010, are now detected at their lowest concentrations. The concentration of 1,2,4-Trichlorobenzene in well 38-R decreased below the GWQS for the First time since 2003. The concentration of chlorobenzene in monitoring well 42-R, detected at the highest concentration during the Second Half 2010, decreased within the range of historic fluctuation. In monitoring well 34-R, 1,2,4-tricholorobenzene was not detected for the third time since the First Half 2010, consistent with a historically decreasing trend. The concentration of bis(2-Ethylhexyl)Phthalate and aniline in monitoring wells 19R and 42R, respectively, were detected at their highest concentrations for the First time since sampling began in 1996. The concentration of 2-Methylnaphthalene in monitoring well MW-2 was detected at its highest concentration for the First time since 1998.

Monitoring wells MW-1A and MW-22R were sampled for VOCs, SVOCs, and metals for the First time during the First Half 2011. Data results indicate that benzene was detected at MW-1A and MW-22R at concentrations above GWQS and chlorobenzene was detected at MW-1A at concentrations above GWQS. The concentration of aniline was detected above GWQS in MW-1A and MW-22R. The concentrations of 2-Methylphenol, 3-Nitroaniline, and 4-Chloroaniline were detected above GWQS in well MW-1A. Concentrations of arsenic, iron, and manganese were detected above GWQS at both MW-1A and MW-22R. Phenol was detected at concentrations above GWQS in well MW-1A.

The remaining VOC and SVOC concentrations in overburden groundwater collected during the First Half 2011 monitoring event are within their respective ranges of historic fluctuations.

The concentrations of magnesium in wells AAA was detected at the highest concentration since to date. The concentration of magnesium in monitoring well KKK decreased to the lowest concentration observed to date. The concentration of manganese in monitoring well KKK decreased to the lowest concentration for the First time since 1998. The concentrations of calcium in monitoring wells CCC-R and KKK decreased to their lowest concentrations to date. The remaining metals concentrations in overburden groundwater collected during the First Half 2011 monitoring event are within their respective ranges of historic fluctuation.

### 3.3.1. Impoundments 1 & 2 Groundwater Quality

During the First Half 2011 sampling event, eleven overburden monitoring wells and piezometers located at Impoundments 1 & 2 were sampled between May 18 and May 19, 2011. Each monitoring well and piezometer with a 10 ft screen (all wells except FLOD-W1S and FLOD-W2S) was sampled with two PDBs to evaluate the presence of stratification within wells. Overburden monitoring wells sampled included FLOD-W2S, FLOD-W1S, 01-MW-01, 01-MW-02, 01-MW-03, PZ-12-1, PZ-12-2, PZ-12-3, PZ-12-4, PZ-12-5, and PZ-12-6. Groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. The groundwater analytical data is provided in Tables 3-5, 3-6, and 3-7.

Accutest Laboratories, Inc. of Dayton, New Jersey (Accutest) collected the groundwater samples from the Impoundment 1 & 2. Accutest (NJ Certification No. 12129) also performed laboratory analysis of the groundwater samples. Accutest reported inconsistent compound lists for VOC analyses and analytical methods used to report 1,4-dioxane. These errors will be corrected for future monitoring events.

Groundwater sample results from the Impoundments 1 & 2 area during the First Half 2011 sampling event have been compared to groundwater samples collected during the Second Half 2010 sampling event and the approved Remedial Investigation (Hydroqual, 2006) and Supplemental Remedial Investigation (Hydroqual, 2007).

Benzene has been consistently detected above GWQS in each of the monitoring wells sampled during the Remedial and Supplemental Investigations and First Half 2011 sampling event, with the exception of the upper PDBs at PZ-12-1 and PZ-12-2 that were below the GWQS during the First Half 2011. Concentrations in these wells have not always exceeded GWQS. Toluene was detected above the GWQS in monitoring wells 01-MW-02, 01-MW-03, FLOD-W1S, and PZ-12-4, similar to historical results. 1,2-Dichorobenzene was detected in monitoring wells 01-MW-01, 01-MW-02, 01-MW-03, FLOD-W1S, and PZ-12-4 at concentrations above GWQS, consistent with historical results. Naphthalene and nitrobenzene in monitoring wells 01-MW-03, FLOD-W1S, and PZ-12-4 were detected at concentrations above GWQS, similar to historical results. Naphthalene and nitrobenzene in monitoring wells 01-MW-02, 01-MW-03, FLOD-W1S, and PZ-12-4 were detected at concentrations above NJGWQS during the First Half 2011 sampling event, similar with historical results.

Concentrations of aluminum, iron, and manganese were detected above GWQS in the majority of the monitoring wells sampled during the Remedial and Supplemental Investigations, Second Half 2010 and First Half 2011 sampling events. First Half 2011 results were similar to historical results.

Additional sampling and associated data will be collected in the vicinity of Impoundments 1 and 2 and will be incorporated in to the Second Half 2011 Monitoring Program as a result of the Settlement Agreement and Order on Consent for Removal Action executed between WHC and USEPA on 19 July 2011.

## 3.4. Bedrock Groundwater Quality

Bedrock groundwater quality was obtained between April 14 and May 19, 2011 and is presented below. As noted in section 3.2, bedrock wells SS, TT, WW, XX, YY, ZZ, EEEE, and FFFF, were retrofitted with FLUTe® liners with discrete monitoring ports for groundwater sampling. FLUTe® procedures are provided in Appendix A.

Accutest collected groundwater samples from the six perimeter bedrock monitoring wells, the active production wells, and a bedrock well in the Impoundment 1&2 floodplain. Accutest also performed laboratory analysis of the groundwater samples. Specific conductance, pH, turbidity, dissolved oxygen, and temperature measurements were recorded in the field and are presented on the field sampling logs in Appendix B. Trend graphs for constituents historically and currently detected in samples during monitoring at the site are included in Appendix C. The groundwater analytical data is provided in Tables 3-5, 3-6, 3-7, and 3-8. The data were reviewed in accordance with NJDEP procedures. These data were evaluated using the NJDEP Electronic Data Systems Application Checker program and no errors were evident. The data validation review is provided in Appendix D.

The concentration of vinyl chloride in well TT P1 was detected at the highest concentration to date, continuing an increasing trend observed since the Second Half 2009. The concentrations of tetrachloroethene and trichloroethene in monitoring well TT P2 decreased to the lowest concentrations observed to date. Benzene was detected in well PW-3 at the lowest concentration observed to date, continuing an overall decreasing trend. Bis(2-ethylhexyl)phthalate, detected in PW-3 slightly above the GWQS during the Second Half 2010, is now non-detect, which is consistent with historic results. The remaining VOC and SVOC concentrations in bedrock groundwater for the First Half 2011 monitoring event are within the range of historic fluctuations.

The concentration of arsenic in well SS P1 decreased to the lowest concentration for the Second time since the Second quarter 2008. The remaining metals concentrations are within the range of historic fluctuations and will continue to be closely monitored during future monitoring events.

# 4. Impound 8 Semi-Annual Monitoring

A total of fifteen shallow bedrock monitoring wells are sampled around the Impound 8 Facility to detect potential releases to groundwater. The monitoring program for the Impound 8 Facility is described in the NJDEP-approved GWDMP.

## 4.1. Overburden Groundwater and Impound 8 Leachate

### 4.1.1. Groundwater Elevation Measurement

Groundwater elevation measurements were obtained on April 25, 2011. The overburden groundwater measurements are used to evaluate the effectiveness of the groundwater interceptor trench and groundwater cut-off wall in minimizing overburden groundwater flow within Impound 8. The groundwater elevation data and elevation changes between April 25, 2011 and the previous monitoring event have been summarized and are provided on Table 4-1. Groundwater elevation changes were consistent with historic variations. An Impound 8 monitoring well location plan is provided as Figure 4-1.

Based on the April 25, 2011 groundwater elevation data, the monitoring wells that are hydraulically upgradient of the groundwater interceptor trench and groundwater cut-off wall include RCRA-S1, RCRA-S3, RCRA-S4, RCRA-S9, and RCRA-S11.

Monitoring wells that are hydraulically downgradient of the groundwater interceptor trench and groundwater cut-off wall include RCRA-S2, RCRA-S5, RCRA-S6, RCRA-S7, RCRA-S8, RCRA-S10, RCRA-S12, RCRA-S13R, RCRA-S14, and RCRA-S15. Consistent with previous monitoring data, wells RCRA-S5, and RCRA-S13R were dry. Wells RCRA-S2, RCRA-S6, RCRA-S7, RCRA-S8, RCRA-S10, RCRA-S12, RCRA-S14, and RCRA-S15 contained groundwater. The overburden wells downgradient of the interceptor trench and cut-off wall that typically contain measurable groundwater levels (RCRA-S7, RCRA-S9, RCRA-S14, and RCRA-S15) are located within an area that has a greater thickness of overburden due to a bedrock trough that runs from the northwest to the southeast along the southwest portion of Impound 8.

Due to the limited occurrence of groundwater in the overburden groundwater zone, a contour map has not been generated. However, Figure 4-2 depicts the water elevations observed during this First Half 2011 monitoring event. As evidenced by the consistently lower groundwater elevations in the wells hydraulically downgradient of the interceptor trench and cut-off wall, the system is effective in controlling overburden groundwater at Impound 8.

The Cell 1, Cell 2, Cell 3, and Cell 4 leachate detection and collection systems have been constructed, and are being monitored in accordance with the ACO. The actual rates are determined by weekly monitoring of a flow-totalizing meter installed on the leachate detection system piping. The data that have been collected during the First Half 2011 monitoring event are included in Appendix E. The Action Leakage Rate (ALR), as approved by the United States Environmental Protection Administration, is 21,302 gal per acre-day (gpad). Monitoring results from the First Half 2011 monitoring event do not exceed the current ALR.

## 4.2. Shallow Bedrock Monitoring

As detailed in the Impound 8 Work Plan, groundwater in the bedrock flows in a southwesterly direction under natural conditions. However, during the operation of a bedrock pumping well located approximately 300 ft to the northeast of the site, at Phillips Concrete Incorporated (formerly Mensing

Cement Company), a divergent flow pattern develops. While the usual groundwater flow direction is to the southwest, the influence of the pumping well has previously reversed the groundwater flow direction under the northern portion of Impound 8, resulting in a northeasterly flow direction during pumping conditions. To account for this divergent flow pattern, the GWDMP has defined two sets of downgradient wells to monitor flow: RCRA D-1 through RCRA D-4 (to monitor the northeast flow); and RCRA D-7 through RCRA D-11 (to monitor the southwest flow). Shallow bedrock wells RCRA-D5, RCRA-D6, RCRA-D14, and RCRA-D15 have been designated as upgradient. In reviewing data it is important to note what wells are inside and outside the groundwater cut-off wall. Monitoring wells and the containment wall are presented in Figure 4-1. A more detailed discussion of the bedrock hydrogeology and the divergent bedrock groundwater flow pattern can be found in the GWDMP.

Groundwater elevation measurements were obtained on April 25, 2011. Divergent flow was not evident based on the groundwater elevations recorded on April 25, 2011 as part of the First Half 2011 monitoring event.

In addition, the GWDMP provides a means to monitor potential impacts to groundwater from Impound 9A. The GWDMP has identified wells RCRA-D14 and RCRA-D15 as upgradient and wells RCRA-D12 and RCRA-D13 as downgradient with respect to Impound 9A. These wells provide a means of comparison between water quality before and after passing beneath Lagoon 9A.

### 4.2.1. Groundwater Elevations

Shallow bedrock groundwater elevation measurements obtained on April 25, 2011 are summarized on Table 4-1. A shallow bedrock groundwater elevation map has been provided as Figure 4-3. The First Half 2011 groundwater elevations indicate a southerly flow direction consistent with historic groundwater flow patterns (Figure 4-3).

Calculations of the estimated shallow bedrock groundwater flow velocity on April 25, 2011 are included in Appendix F.

### 4.2.2. Impound 8 Groundwater Sampling and Analysis

Groundwater sampling was performed between April 26 and April 28, 2011 at wells RCRA-D1 through RCRA-D15. The Impound 8 Facility shallow bedrock wells include a dedicated groundwater sampling system. The system is the "QED-Well Wizard" comprised of dedicated pump tubing and bladders in each well, with dedicated on-site pneumatic controllers. Field sampling logs are presented in Appendix B.

The analytical parameters for the samples included the following:

- TCL VOCs
- TCL SVOCs
- TAL Metals
- TDS
- TOC
- TOX.

Analytical results for the First Half 2011 groundwater monitoring event are provided in Tables 4-2 through 4-5. The data were reviewed in accordance with NJDEP procedures. Trend graphs for constituents historically and currently detected in samples during monitoring at the site are included in Appendix C. These data were evaluated using the NJDEP Electronic Data Systems Application Checker program and no errors were evident. A data validation review is provided in Appendix D.

Tetrachloroethene was detected in well RCRA-D10 at the lowest detected concentration observed to date. The concentration of trichloroethene in upgradient well RCRA-D15, detected at the highest concentration during the Second Half 2010, is now within the range of historic fluctuation. The remaining VOC and SVOC concentrations in the Impound 8 groundwater samples collected during the First Half 2011 monitoring event are consistent with previously detected results.

The concentrations of sodium and arsenic decreased from highest concentrations observed during the Second Half 2010 in monitoring wells RCRA-D6 and RCRA-D1, respectively The remaining metals concentrations in the Impound 8 wells are within the range of historic fluctuations. TOC in monitoring well RCRA-D6 decreased to the lowest concentration observed to date. TDS in monitoring well RCRA-D9 decreased to the lowest concentration observed to date. TDS in monitoring well RCRA-D12, detected at the highest concentration during the Second Half 2010, is now within the ranges of historic fluctuations. The remaining TDS, TOC, and TOX concentrations were within the range of historic fluctuations during the First Half 2011 monitoring event.

#### 4.2.3. Impound 8 Statistical Analysis

In accordance with the ACO Amendment, statistical analyses are required to be performed comparing downgradient groundwater quality as monitored by wells RCRA-D1 through RCRA-D4 and RCRA-D7 through RCRA-D11, to upgradient groundwater quality as monitored by wells RCRA-D5, RCRA-D6, RCRA-D14, and RCRA-D15. It is noted that the groundwater elevations recorded on April 25, 2011 do not indicate a divergent groundwater flow pattern and the "upgradient/downgradient" well designations stated in the GWDMP may not be reflected based on the April 25, 2011 elevations. However, the designations specified in the GWDMP are maintained in this report since there remains potential for divergent flow due to the off-site pumping.

A set of stipulated parameters has been identified to determine if there is statistical significance between groundwater quality from the upgradient and downgradient shallow bedrock monitoring wells. The stipulated parameters are listed below:

- Benzene
- Chlorobenzene
- Chloroform
- Ethylbenzene
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene
- pH
- TDS
- TOC
- TOX
- Specific Conductivity

The required statistical analysis is the Dunnett's Multiple Comparison T-test method. A description of this method is provided in Appendix G. The statistical evaluation of results can only be conducted if the downgradient monitoring wells have detectable concentrations of the parameters identified, and there is variance in the upgradient well concentrations.

Statistical analyses were performed for the following stipulated parameters: pH, specific conductivity, TOC, TDS, chloroform, tetrachloroethene, and trichloroethene. Statistical analyses were not performed for TOX, benzene, chlorobenzene, ethylbenzene, 1,1,1-trichloroethane, or toluene as these parameters were not detected in the upgradient or downgradient monitoring wells.

Appendix H contains the statistical data. The calculated T-values were below the critical T-values of 5.61 for pH and 4.31 for the remaining parameters for which the statistical analyses were conducted, with the exception of TOC for well RCRA-D9, which exceeded the critical T-value of 4.31. TOC values for well RCRA-D9 will be closely monitored during future sampling events.

### 4.2.4. Lagoon 9A Sampling and Analysis

In accordance with the GWDMP for the Impound 8 Facility, and the ACO amendment, a qualitative comparison between upgradient and downgradient wells in the Lagoon 9A area is required and was completed. This analysis is designed to monitor the effectiveness of the closure and potential impacts to groundwater quality. Tables 4-2 through 4-5 provide a summary of the analytical results from the First Half 2011 monitoring event. Trend graphs for constituents historically and currently detected in samples during monitoring at the site are included in Appendix C.

The GWDMP has identified wells RCRA-D14 and RCRA-D15 as upgradient shallow bedrock monitoring wells in relation to Lagoon 9A. Shallow bedrock monitoring wells RCRA-D12 and RCRA-D13 were identified as downgradient of Lagoon 9A. Wells RCRA-D12 and RCRA-D13 were installed to evaluate potential impacts of Lagoon 9A, and were not intended for use in the Impound 8 upgradient evaluation. This arrangement allows comparisons between upgradient groundwater quality, relative to Impound 8, before and after groundwater passes beneath Lagoon 9A. Review of the April 25, 2011 shallow bedrock groundwater elevation data and map presented as Figure 4-3 indicates that well RCRA-D14 has a higher groundwater elevation compared to well RCRA-D13 and well RCRA-D15 has a higher groundwater elevation compared to well RCRA-D12. Therefore, wells RCRA-D14 and RCRA-D15 can be considered upgradient of Lagoon 9A at the time of the April 25, 2011 groundwater elevation measurements.

VOCs and SVOCs were not detected above GWQS in the upgradient or downgradient wells during the First Half 2011 monitoring event, with the exception of upgradient well RCRA-D15. Historically, a number of VOCs have consistently been detected above GWQS in this well. TDS was not detected above GWQS in the upgradient or downgradient wells during the First Half 2011 monitoring event, with the exception of downgradient well RCRA-D12. Metals, TOC, and TOX results for the First Half 2011 monitoring event were within the range of historic fluctuations.

# Tables

**Pfizer Inc**
**Bound Brook, New Jersey Site**
**First Half 2011 Site Wide Groundwater Program**

**Table 2-1.** ***Reference Summary***

| Date | Author | Title/Item |
|---|---|---|
| 1978 | Geraghty & Miller | Study of Ground Water Conditions |
| 1985 | Camp, Dresser & McKee | Development of Ground Water Model |
| 1988 | Blasland, Bouck & Lee | Quarterly Monitoring Program |
| 1988 | Blasland, Bouck & Lee | Impound 8 Ground Water Detection Monitoring Work Plan |
| 1988 | Blasland, Bouck & Lee | Impound 8 Facility Final Design Report |
| 1988 | Blasland, Bouck & Lee | Impound 8 Facility Implementation Plan |
| 1991 | Camp, Dresser & McKee | Hydro-geologic Test Plan for Production Wells |
| 1992 | Camp, Dresser & McKee | Relocation of Production Wells, Pump Test Report |
| 1994 | Camp, Dresser & McKee | Final Summary Report, Startup of Production wells PW-2 and PW-3 |
| 1995 | Camp, Dresser & McKee | First Quarter 1995, ACO Amendment Ground Water Monitoring Program |
| 1998 | O'Brien &Gere Engineers, Inc. | Impound 8 Facility Ground Water Monitoring Fourth Quarter 1997 |
| 1998 | O'Brien &Gere Engineers, Inc. | Impound 8 Facility Ground Water Monitoring First Quarter 1998 |
| 1998 | O'Brien &Gere Engineers, Inc. | Impound 8 Facility Ground Water Monitoring Second Quarter 1998 |
| 1998 | O'Brien &Gere Engineers, Inc. | Impound 8 Facility Ground Water Monitoring Third Quarter 1998 |
| 1998 | O'Brien &Gere Engineers, Inc. | Site-Wide Ground Water Monitoring Fourth Quarter 1997 |
| 1998 | O'Brien &Gere Engineers, Inc. | Site-Wide Ground Water Monitoring First Quarter 1998 |
| 1998 | O'Brien &Gere Engineers, Inc. | Site-Wide Ground Water Monitoring Second Quarter 1998 |
| 1998 | O'Brien &Gere Engineers, Inc. | Site-Wide Ground Water Monitoring Third Quarter 1998 |
| 1998-2008 | O'Brien &Gere Engineers, Inc. | Site-Wide Ground Water Monitoring Fourth Quarter 1998 - Fourth Quarter 2008 |
| 2009 | O'Brien &Gere Engineers, Inc. | First Semi-Annual 2009 - Second Semi-Annual 2009 |
| 2010 | O'Brien &Gere Engineers, Inc. | First Semi-Annual 2010 - Second Semi-Annual 2010 |

**(Table by O'Brien & Gere Engineers Inc.)**

**Pfizer Inc**
**Bound Brook, New Jersey Site**
**First Half 2011 Site Wide Groundwater Program**

**Table 3-1.** *Site Production Well Pumping Information*

| Period Ending | Hours | | Gallons | Notes |
|---|---|---|---|---|
| | PW2 | PW3 | (Weekly Average) | |
| 1/7/2011 | 0 | 168 | 661,000 | |
| 1/14/2011 | 36 | 132 | 662,000 | |
| 1/21/2011 | 168 | 0 | 659,000 | |
| 1/28/2011 | 168 | 0 | 661,000 | |
| 2/4/2011 | 168 | 0 | 661,000 | |
| 2/11/2011 | 132 | 36 | 663,000 | |
| 2/18/2011 | 0 | 168 | 662,000 | |
| 2/25/2011 | 0 | 168 | 663,000 | |
| 3/4/2011 | 0 | 168 | 658,000 | |
| 3/11/2011 | 36 | 132 | 660,000 | |
| 3/18/2011 | 168 | 0 | 665,000 | |
| 3/25/2010 | 168 | 0 | 661,000 | |
| 4/1/2011 | 168 | 0 | 662,000 | |
| 4/8/2011 | 168 | 0 | 662,000 | |
| 4/15/2011 | 132 | 36 | 666,000 | |
| 4/22/2011 | 0 | 168 | 668,000 | |
| 4/29/2010 | 0 | 168 | 665,000 | |
| 5/6/2011 | 0 | 168 | 662,000 | |
| 5/13/2011 | 0 | 168 | 672,000 | |
| 5/20/2011 | 0 | 168 | 662,000 | |
| 5/27/2011 | 0 | 168 | 664,000 | |
| 6/3/2011 | 0 | 168 | 663,000 | |
| 6/10/2011 | 0 | 168 | 666,000 | |
| 6/17/2011 | 0 | 168 | 671,000 | |
| 6/24/2011 | 0 | 168 | 661,000 | |

Notes:

**Pfizer Inc**
**Bound Brook, New Jersey**
**First Half 2011**
**Site-Wide Groundwater Program**

**Table 3-2.** *Site Production Well Historical Pumping Information*

| Report Date | Report Interval | Total Production Well Volume | | Running Total Volume |
|---|---|---|---|---|
| July-1988 | 2Q88 | 24,050,000 | * | 24,050,000 |
| October-1988 | 3Q88 | 59,800,000 | * | 83,850,000 |
| January-1989 | 4Q88 | 59,800,000 | * | 143,650,000 |
| April-1989 | 1Q89 | 58,500,000 | * | 202,150,000 |
| July-1989 | 2Q89 | 59,150,000 | * | 261,300,000 |
| October-1989 | 3Q89 | 59,800,000 | * | 321,100,000 |
| January-1990 | 4Q89 | 59,800,000 | * | 380,900,000 |
| April-1990 | 1Q90 | 58,500,000 | * | 439,400,000 |
| July-1990 | 2Q90 | 59,150,000 | * | 498,550,000 |
| October-1990 | 3Q90 | 59,800,000 | * | 558,350,000 |
| January-1991 | 4Q90 | 59,800,000 | * | 618,150,000 |
| April-1991 | 1Q91 | 58,500,000 | * | 676,650,000 |
| July-1991 | 2Q91 | 59,150,000 | * | 735,800,000 |
| October-1991 | 3Q91 | 59,800,000 | * | 795,600,000 |
| January-1992 | 4Q91 | 59,800,000 | * | 855,400,000 |
| April-1992 | 1Q92 | 59,150,000 | * | 914,550,000 |
| July-1992 | 2Q92 | 59,150,000 | * | 973,700,000 |
| October-1992 | 3Q92 | 59,800,000 | * | 1,033,500,000 |
| January-1993 | 4Q92 | 59,800,000 | * | 1,093,300,000 |
| April-1993 | 1Q93 | 58,500,000 | * | 1,151,800,000 |
| July-1993 | 2Q93 | 59,150,000 | * | 1,210,950,000 |
| October-1993 | 3Q93 | 59,800,000 | * | 1,270,750,000 |
| January-1994 | 4Q93 | 59,800,000 | * | 1,330,550,000 |
| March-1994 | 1Q94 | 58,500,000 | * | 1,389,050,000 |
| July-1994 | 2Q94 | 59,150,000 | * | 1,448,200,000 |
| September-1994 | 3Q94 | 59,800,000 | * | 1,508,000,000 |
| January-1995 | 4Q94 | 59,800,000 | * | 1,567,800,000 |
| April-1995 | 1Q95 | 58,500,000 | * | 1,626,300,000 |
| July-1995 | 2Q95 | 60,200,000 | | 1,686,500,000 |
| October-1995 | 3Q95 | 59,800,000 | * | 1,746,300,000 |
| March-1996 | 4Q95 | 63,100,000 | | 1,809,400,000 |
| April-1996 | 1Q96 | 63,100,000 | | 1,872,500,000 |
| July-1996 | 2Q96 | 61,400,000 | | 1,933,900,000 |
| October-1996 | 3Q96 | 61,800,000 | | 1,995,700,000 |
| January-1997 | 4Q96 | 61,900,000 | | 2,057,600,000 |
| April-1997 | 1Q97 | 62,600,000 | | 2,120,200,000 |
| July-1997 | 2Q97 | 62,700,000 | | 2,182,900,000 |
| October-1997 | 3Q97 | 62,600,000 | | 2,245,500,000 |
| January-1998 | 4Q97 | 62,900,000 | | 2,308,400,000 |
| April-1998 | 1Q98 | 61,300,000 | | 2,369,700,000 |
| July-1998 | 2Q98 | 61,900,000 | | 2,431,600,000 |
| October-1998 | 3Q98 | 62,700,000 | | 2,494,300,000 |
| January-1999 | 4Q98 | 62,600,000 | | 2,556,900,000 |
| April-1999 | 1Q99 | 58,500,000 | * | 2,615,400,000 |

**Pfizer Inc**
**Bound Brook, New Jersey**
**First Half 2011**
**Site-Wide Groundwater Program**

**Table 3-2.** *Site Production Well Historical Pumping Information*

| Report Date | Report Interval | Total Production Well Volume | | Running Total Volume |
|---|---|---|---|---|
| July-1999 | 2Q99 | 61,100,000 | | 2,676,500,000 |
| October-1999 | 3Q99 | 55,685,000 | | 2,732,185,000 |
| January-2000 | 4Q99 | 64,440,000 | | 2,796,625,000 |
| April-2000 | 1Q00 | 62,980,000 | | 2,859,605,000 |
| July-2000 | 2Q00 | 59,920,000 | | 2,919,525,000 |
| October-2000 | 3Q00 | 59,800,000 | * | 2,979,325,000 |
| January-2001 | 4Q00 | 59,800,000 | * | 3,039,125,000 |
| April-2001 | 1Q01 | 59,410,000 | | 3,098,535,000 |
| July-2001 | 2Q01 | 59,759,000 | | 3,158,294,000 |
| October-2001 | 3Q01 | 59,612,000 | | 3,217,906,000 |
| January-2002 | 4Q01 | 59,800,000 | * | 3,277,706,000 |
| April-2002 | 1Q02 | 58,854,000 | | 3,336,560,000 |
| July-2002 | 2Q02 | 61,826,000 | | 3,398,386,000 |
| October-2002 | 3Q02 | 60,881,500 | | 3,459,267,500 |
| January-2003 | 4Q02 | 61,941,000 | | 3,521,208,500 |
| April-2003 | 1Q03 | 59,980,000 | | 3,581,188,500 |
| July-2003 | 2Q03 | 60,358,000 | | 3,641,546,500 |
| October-2003 | 3Q03 | 60,058,000 | | 3,701,604,500 |
| January-2004 | 4Q03 | 61,064,000 | | 3,762,668,500 |
| April-2004 | 1Q04 | 52,125,000 | | 3,814,793,500 |
| July-2004 | 2Q04 | 60,355,000 | | 3,875,148,500 |
| October-2004 | 3Q04 | 60,887,000 | | 3,936,035,500 |
| January-2005 | 4Q04 | 61,770,000 | | 3,997,805,500 |
| April-2005 | 1Q05 | 60,378,000 | | 4,058,183,500 |
| July-2005 | 2Q05 | 61,454,000 | | 4,119,637,500 |
| October-2005 | 3Q05 | 60,842,000 | | 4,180,479,500 |
| January-2006 | 4Q05 | 60,961,000 | | 4,241,440,500 |
| April-2006 | 1Q06 | 59,871,000 | | 4,301,311,500 |
| July-2006 | 2Q06 | 60,320,000 | | 4,361,631,500 |
| October-2006 | 3Q06 | 60,306,000 | | 4,421,937,500 |
| January-2007 | 4Q06 | 61,389,000 | | 4,483,326,500 |
| April-2007 | 1Q07 | 59,537,000 | | 4,542,863,500 |
| July-2007 | 2Q07 | 60,420,000 | | 4,603,283,500 |
| October-2007 | 3Q07 | 61,084,000 | | 4,664,367,500 |
| January-2008 | 4Q07 | 61,133,000 | | 4,725,500,500 |
| April-2008 | 1Q08 | 60,312,000 | | 4,785,812,500 |
| July-2008 | 2Q08 | 60,314,000 | | 4,846,126,500 |
| October-2008 | 3Q08 | 60,974,000 | | 4,907,100,500 |
| January-2009 | 4Q08 | 61,238,000 | | 4,968,338,500 |
| July-2009 | 1H09 | 120,201,000 | | 5,088,539,500 |
| December-2009 | 2H09 | 122,131,000 | | 5,210,670,500 |
| July-2010 | 1H10 | 120,000,000 | | 5,330,670,500 |
| December-2010 | 2H10 | 122,000,000 | | 5,452,670,500 |
| July-2011 | 1H11 | 119,941,000 | | 5,572,611,500 |

| | |
|---|---|
| Total to Date | 5,573,000,000 |

* - defaulted to 650,000 gallons per week in absence of data

Wyeth Holdings Corporation
Former American Cyanamid Site
First Half 2011 Semi-Annual Site Wide Groundwater Program

**Table 3-3**
**Overburden Groundwater Elevations - April 25 & 30, 2011**

| Well I.D. | Permit Number | Well Casing Elevation (ft msl) | Well Depth (ft BTOC) | Bottom of Well Elevation (ft msl) | Screened Interval Elevation (ft msl) Top | Bottom | Depth to Water (ft BTOC) | 2010 Second Semi-Annual Groundwater Elevation (ft msl) | 2011 First Semi-Annual Groundwater Elevation (ft msl) | Groundwater Elevation Change (ft msl) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-1A | 25-33942-7 | 46.35 | 14.4 | 31.9 | NA | NA | 12.44 | 33.91 | NA | NA |
| MW-2 | 25-33944-3 | 34.26 | 21.1 | 13.2 | 28.2 | 13.2 | 7.25 | 23.08 | 27.01 | 3.93 |
| MW-3 | 25-33945-1 | 35.94 | 22.2 | 13.7 | 28.7 | 13.7 | 5.40 | 26.62 | 30.54 | 3.92 |
| MW-5 | 25-33946-0 | 35.00 | 22.5 | 12.5 | 27.5 | 12.5 | 6.18 | 25.33 | 28.82 | 3.49 |
| MW-7 | 25-33949-4 | 34.47 | 21.7 | 12.8 | 27.8 | 12.8 | 3.45 | 28.22 | 31.02 | 2.80 |
| MW-9 | 25-33950-8 | 40.88 | 25.1 | 15.8 | 35.8 | 15.8 | 11.88 | 27.12 | 29.00 | 1.88 |
| MW-10 | NA | 40.13 | 22.0 | 18.1 | 36.1 | 18.1 | 5.35 | 33.35 | 34.78 | 1.43 |
| MW-12 | NA | 34.26 | 22.0 | 12.3 | 30.3 | 12.3 | 6.24 | 23.50 | 28.02 | 4.52 |
| MW-15 | NA | 30.36 | 23.0 | 7.4 | 27.4 | 7.4 | 1.40 | 26.30 | 28.96 | 2.66 |
| MW-17 | NA | 34.42 | 19.0 | 15.4 | 30.4 | 15.4 | 4.66 | 25.57 | 29.76 | 4.19 |
| MW-18A | NA | 34.43 | 19.0 | 15.4 | 32.4 | 15.4 | 6.26 | 26.45 | 28.17 | 1.72 |
| MW-19 | NA | 34.21 | 20.0 | 14.2 | 32.2 | 14.2 | 6.39 | 25.10 | 27.82 | 2.72 |
| MW-22R | 25-00065340 | 35.92 | 20.0 | 15.9 | 25.9 | 15.9 | 7.89 | 25.17 | 28.03 | 2.86 |
| MW-25 | NA | 34.37 | 16.5 | 17.9 | 30.4 | 17.9 | 5.76 | 25.59 | 28.61 | 3.02 |
| MW-28 | NA | 35.19 | 22.0 | 13.2 | 32.2 | 13.2 | 7.46 | 26.56 | 27.73 | 1.17 |
| MP11-W1S | 25-00065339 | 33.72 | 18.0 | 15.7 | 25.7 | 15.7 | 6.15 | 24.97 | 27.57 | 2.60 |
| MW05-W1S | 25-00065337 | 34.37 | 18.0 | 16.4 | 26.4 | 16.4 | 7.74 | 22.44 | 26.63 | 4.19 |
| 28-R | NA | 30.88 | 17.8 | 13.1 | 18.1 | 13.1 | 3.55 | 26.59 | 27.33 | 0.74 |
| 19-R | 25-31283-9 | 36.94 | 11.6 | 25.3 | 30.3 | 25.3 | 3.46 | 31.83 | 33.48 | 1.65 |
| 21-R | 25-31284-7 | 51.71 | 22.6 | 29.1 | 34.1 | 29.1 | 17.58 | 31.86 | 34.13 | 2.27 |
| O-R | 25-22855 | 37.61 | 17.9 | 19.7 | 24.7 | 19.7 | 3.88 | 30.28 | 33.73 | 3.45 |
| AAA | 25-24942-8 | 29.31 | 16.8 | 12.5 | 17.5 | 12.5 | 3.76 | 23.48 | 25.55 | 2.07 |
| CCC-R | 25-50084 | 39.63 | 26.5 | 13.1 | 18.1 | 13.1 | 13.72 | 22.55 | 25.91 | 3.36 |
| EEE-R | 25-31282-1 | 37.98 | 25.1 | 12.9 | 17.9 | 12.9 | 11.23 | 21.96 | 26.75 | 4.79 |
| III | 25-25027-2 | 30.69 | 19.8 | 10.9 | 15.9 | 10.9 | 2.68 | 26.85 | 28.01 | 1.16 |
| KKK | 25-25029-9 | 39.63 | 28.3 | 11.3 | 16.3 | 11.3 | 12.60 | 25.54 | 27.03 | 1.49 |
| 16MW-2 | NA | 28.8 | 16.1 | 12.7 | 17.7 | 12.7 | 4.17 | 24.01 | 24.63 | 0.62 |
| 32-R | 25-33063-2 | 38.65 | 20.4 | 18.3 | 23.3 | 18.3 | NM | 36.41 | NM | NM |
| 34-R | 25-33062-4 | 42.91 | 26.3 | 16.6 | 21.6 | 16.6 | 14.02 | 25.51 | 28.89 | 3.38 |
| 36-R | 25-33061-6 | 39.47 | 24.7 | 14.8 | 19.8 | 14.8 | 9.30 | 26.64 | 30.17 | 3.53 |
| P24-91-1 | 25-39209 | 41.40 | 26.8 | 14.6 | 24.6 | 14.6 | 12.83 | 23.79 | 28.57 | 4.78 |
| 38-R | 25-33064-1 | 43.24 | 25.6 | 17.6 | 22.6 | 17.6 | 12.23 | 26.53 | 31.01 | 4.48 |
| 41-R | 25-33065-9 | 40.46 | 26.2 | 14.3 | 19.3 | 14.3 | 11.13 | 26.94 | 29.33 | 2.39 |
| 42-R | 25-33066-7 | 41.05 | 24.2 | 16.9 | 21.9 | 16.9 | 12.11 | 27.39 | 28.94 | 1.55 |
| TFP-94-1 R | 25-49039 | 31.28 | 19.1 | 12.2 | 20.2 | 12.2 | 3.47 | 24.18 | 27.81 | 3.63 |
| PZ-12-1 | 25-56205 | 28.43 | 14.7 | 13.7 | 23.7 | 13.7 | 3.2 | 22.15 | 25.23 | NA |
| PZ-12-2 | 25-56206 | 28.22 | 14.9 | 13.3 | 23.3 | 13.3 | 4.32 | 21.62 | 23.90 | NA |
| PZ-12-3 | 25-56207 | 28.93 | 15.0 | 13.9 | 23.9 | 13.9 | 3.27 | 23.35 | 25.66 | NA |
| PZ-12-4 | 25-56208 | 27.6 | 16.8 | 10.8 | 20.8 | 10.8 | 4.25 | 22.06 | 23.35 | NA |
| PZ-12-5 | 25-56209 | 26.64 | 14.9 | 11.8 | 21.8 | 11.8 | 2.99 | 23.48 | 23.65 | NA |
| PZ-12-6 | 25-56210 | 26.48 | 15.2 | 11.3 | 21.3 | 11.3 | 3.69 | 21.73 | 22.79 | NA |
| 01-MW-01 | NA | 27.33 | 15.4 | NA | NA | NA | 3.81 | 20.11 | 23.52 | NA |
| 01-MW-02 | NA | 27.94 | 18.1 | NA | NA | NA | 4.35 | 20.27 | 23.59 | NA |
| 01-MW-03 | NA | 27.01 | 17.5 | NA | NA | NA | 3.11 | 22.87 | 23.90 | NA |
| FLOD-W2S | 25-00067732 | 26.31 | 12.4 | 13.9 | 18.9 | 13.9 | 4.15 | 18.48 | 22.16 | NA |
| FLOD-W1S | 25-00067731 | 27.62 | 17.4 | 10.2 | 15.2 | 10.2 | 5.24 | 19.28 | 22.38 | NA |
| Staff Gauge-1 | NA | 23.61 | NA | NA | NA | NA | 1.94 | 21.06 | 21.67 | 0.61 |
| Staff Gauge-4 | NA | 39.29 | NA | NA | NA | NA | 10.52 | 28.46 | 28.77 | 0.31 |
| Staff Gauge-7 | NA | 19.19 | NA | NA | NA | NA | NM | 17.86 | NM | NM |
| Staff Gauge-8 | NA | 33.82 | NA | NA | NA | NA | NM | 27.76 | NM | NM |
| Staff Gauge-9 | NA | 31.29 | NA | NA | NA | NA | 3.95 | 27.77 | 27.34 | -0.43 |
| Staff Gauge-10 | NA | 34.78 | NA | NA | NA | NA | 8.48 | 26.95 | 26.30 | NA |
| Staff Gauge-11 | NA | 28.58 | NA | NA | NA | NA | 1.48 | 27.59 | 27.10 | -0.49 |
| Staff Gauge-12 | NA | 28.54 | NA | NA | NA | NA | 3.92 | 25.13 | 24.62 | -0.51 |
| Staff Gauge-14 | NA | 25.42 | NA | NA | NA | NA | 2.94 | 21.69 | 22.48 | NA |
| Staff Gauge-15 | NA | 21.63 | NA | NA | NA | NA | NM | NM | NM | NA |
| Staff Gauge-16 | NA | 28.31 | NA | NA | NA | NA | 3.58 | 23.90 | 24.73 | 0.83 |

Notes:
ft BTOC - feet below top of casing
ft msl - feet mean sea level
NA - Not Available
NM - Not Measured
SG-7 was submerged at the time of measurement.
SG-8 damaged during construction.
MW-1A depth to water measured April 30, 2011.

Wyeth Holdings Corporation
Former American Cyanamid Site
First Half 2011 Semi-Annual Site Wide Groundwater Program

**Table 3-4**
**Bedrock Water Elevations - April 25, 2011**

| Well Number | Permit Number | Casing Elevation (ft msl) | Well Depth (ft BTOC) | Bottom of Well Elevation (ft msl) | Screened Interval Elevation (ft msl) Top | Screened Interval Elevation (ft msl) Bottom | Depth to Water (ft BTOC) | 2010 Second Semi-Annual Groundwater Elevation (ft msl) | 2011 First Semi-Annual Groundwater Elevation (ft msl) | Groundwater Elevation Change (ft msl) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Production Well* | | | | | | | | | | |
| PW-2* | 25-42456 | 36.33 | 300.0 | -263.7 | -13.7 | -263.7 | 78.79 | -45.09 | -42.46 | 2.63 |
| PW-3* | 25-42216 | 36.49 | 299.0 | -262.5 | -13.5 | -262.5 | NM | -45.18 | NM | NM |
| *Hill Property* | | | | | | | | | | |
| PW-16* | 25-8217 | 56.73 | 404.0 | -347.3 | 11.7 | -347.3 | NM | NM | NM | NM |
| *Perimeter Bedrock Wells* | | | | | | | | | | |
| SS (Port 1) | 25-20094-3 | 32.31 | 60.0 | -27.7 | -20.0 | -40.0 | Artesian | 28.88 | NA | NA |
| SS (Port 2) | 25-20094-3 | 32.31 | 255.0 | -222.7 | -215.0 | -235.0 | 2.57 | 28.53 | 29.74 | 1.21 |
| SS (Port 3) | 25-20094-3 | 32.31 | 382.0 | -349.7 | -342.0 | -362.0 | Artesian | 28.83 | NA | NA |
| TT (Port 1) | 25-20095 | 47.81 | 75.0 | -27.2 | -17.0 | -37.0 | 21.08 | 25.03 | 26.73 | 1.70 |
| TT (Port 2) | 25-20095 | 47.81 | 192.0 | -144.2 | -134.0 | -154.0 | 27.00 | 18.79 | 20.81 | 2.02 |
| TT (Port 3) | 25-20095 | 47.81 | 310.0 | -262.2 | -252.0 | -272.0 | 70.02 | -4.19 | -22.21 | -18.02 |
| WW (Port 1) | 25-20632-0 | 25.18 | 35.0 | -9.8 | -1.0 | -21.0 | 6.01 | 15.46 | 19.17 | 3.71 |
| WW (Port 2) | 25-20632-0 | 25.18 | 152.0 | -126.8 | -118.0 | -138.0 | 5.53 | 15.53 | 19.65 | 4.12 |
| WW (Port 3) | 25-20632-0 | 25.18 | 375.0 | -349.8 | -341.0 | -361.0 | 5.21 | 16.28 | 19.97 | 3.69 |
| XX (Port 1) | 25-20630 | 26.77 | 35.0 | -8.2 | 0.0 | -20.0 | 6.18 | 17.03 | 20.59 | 3.56 |
| XX (Port 2) | 25-20630 | 26.77 | 190.0 | -163.2 | -155.0 | -175.0 | 5.59 | 17.79 | 21.18 | 3.39 |
| XX (Port 3) | 25-20630 | 26.77 | 380.0 | -353.2 | -345.0 | -365.0 | 7.07 | 16.71 | 19.70 | 2.99 |
| YY (Port 1) | 25-20631 | 72.19 | 55.5 | 16.7 | 34.0 | 14.0 | 39.48 | 29.45 | 32.71 | 3.26 |
| YY (Port 2) | 25-20631 | 72.19 | 170.5 | -98.3 | -81.0 | -101.0 | 43.51 | 26.66 | 28.68 | 2.02 |
| YY (Port 3) | 25-20631 | 72.19 | 345.5 | -273.3 | -256.0 | -276.0 | 49.10 | 19.82 | 23.09 | 3.27 |
| ZZ (Port 1) | 25-20633-8 | 42.11 | 70.5 | -28.4 | -10.0 | -30.0 | 10.23 | 28.90 | 31.88 | 2.98 |
| ZZ (Port 2) | 25-20633-8 | 42.11 | 200.5 | -158.4 | -140.0 | -160.0 | 3.29 | 34.47 | 38.82 | 4.35 |
| ZZ (Port 3) | 25-20633-8 | 42.11 | 280.5 | -238.4 | -220.0 | -240.0 | 3.50 | 34.80 | 38.61 | 3.81 |
| ZZ (Port 4) | 25-20633-8 | 42.11 | 320.5 | -278.4 | -270.0 | -280.0 | 3.61 | 35.49 | 38.50 | 3.01 |
| MJ* | NA | 53.47 | 160.0 | -106.5 | NA | -106.5 | NM | NA | NA | NA |
| *Main Plant Bedrock Wells* | | | | | | | | | | |
| AAAA-O* | 25-25419 | 32.61 | 82.3 | -49.7 | 7.6 | -49.7 | 4.32 | 26.05 | 28.29 | 2.24 |
| AAAA-shall | 25-25419 | 32.41 | 123.4 | -91.0 | -77.6 | -91.0 | 4.94 | 25.57 | 27.47 | 1.90 |
| AAAA-inter | 25-25419 | 32.37 | 201.3 | -168.9 | -162.6 | -168.9 | 6.48 | 23.83 | 25.89 | 2.06 |
| AAAA-deep | 25-25419 | 32.4 | 300.0 | -267.6 | -257.6 | -267.6 | 4.14 | 25.90 | 28.26 | 2.36 |
| BBBB-O* | 25-25420-1 | 36.04 | 68.5 | -32.5 | -4.0 | -32.5 | 7.98 | 24.96 | 28.06 | 3.10 |
| BBBB-shall | 25-25420-1 | 36.22 | 155.0 | -118.8 | -108.8 | -118.8 | 19.42 | 12.39 | 16.80 | 4.41 |
| BBBB-deep | 25-25420-1 | 36.10 | 360.0 | -323.9 | -313.9 | -323.9 | 118.10 | -80.93 | -82.00 | -1.07 |
| CCCC-shall | 25-25421 | 39.14 | 59.4 | -20.3 | -19.0 | -29.0 | 16.32 | 20.44 | 22.82 | 2.38 |
| CCCC-inter | 25-25421 | 39.01 | 185.9 | -146.9 | -109.0 | -119.0 | 15.83 | 26.17 | 23.18 | -2.99 |
| CCCC-deep | 25-25421 | 38.55 | 375.0 | -336.5 | -259.0 | -269.0 | 11.20 | 20.30 | 27.35 | 7.05 |
| DDDD-O* | 25-25422 | 49.67 | 50.9 | -1.2 | 9.7 | -1.2 | 22.06 | 24.37 | 27.61 | 3.24 |
| DDDD-shall | 25-25422 | 49.67 | 69.1 | -19.4 | -170.3 | -180.3 | 40.78 | 6.46 | 8.89 | 2.43 |
| DDDD-deep | 25-25422 | 49.67 | 365.0 | -315.3 | -305.3 | -315.3 | 21.87 | 24.53 | 27.80 | 3.27 |
| EEEE (Port 1) | 25-27783-9 | 62.04 | 55.5 | 6.5 | 26.0 | 6.0 | 34.83 | 24.10 | 27.21 | 3.11 |
| EEEE (Port 2) | 25-27783-9 | 62.04 | 90.5 | -28.5 | -9.0 | -29.0 | 34.71 | 24.29 | 27.33 | 3.04 |
| EEEE (Port 3) | 25-27783-9 | 62.04 | 170.5 | -108.5 | -89.0 | -109.0 | 36.2 | 22.66 | 25.84 | 3.18 |
| EEEE (Port 4) | 25-27783-9 | 62.04 | 280.5 | -218.5 | -199.0 | -219.0 | 38.96 | 20.29 | 23.08 | 2.79 |
| FFFF (Port 1) | 25-27784-7 | 62.67 | 55.5 | 7.2 | 25.0 | 5.0 | 37.24 | 22.55 | 25.43 | 2.88 |
| FFFF (Port 2) | 25-27784-7 | 62.67 | 95.5 | -32.8 | -15.0 | -35.0 | 38.56 | 21.21 | 24.11 | 2.90 |
| FFFF (Port 3) | 25-27784-7 | 62.67 | 200.5 | -137.8 | -120.0 | -140.0 | 39.76 | 20.00 | 22.91 | 2.91 |
| FFFF (Port 4) | 25-27784-7 | 62.67 | 275.5 | -212.8 | -195.0 | -215.0 | 46.1 | 14.00 | 16.57 | 2.57 |
| GGGG (Port 1) | 25-27785-5 | 51.04 | 60.0 | -9.0 | 0.0 | -20.0 | 27.84 | 13.04 | 23.20 | 10.16 |
| GGGG (Port 2) | 25-27785-5 | 51.04 | 110.0 | -59.0 | -50.0 | -70.0 | 27.98 | 43.31 | 23.06 | -20.25 |
| GGGG (Port 3) | 25-27785-5 | 51.04 | 205.0 | -154.0 | -145.0 | -165.0 | 36 | 20.84 | 15.04 | -5.80 |
| IIII-O* | 25-32189 | 28.24 | 80.7 | -52.5 | -9.8 | -52.5 | 0.18 | 22.18 | 28.06 | 5.88 |
| IIII-shall | 25-32189 | 28.24 | 172.4 | -144.2 | -116.8 | -144.2 | 5.36 | 19.02 | 22.88 | 3.86 |
| IIII - deep | 25-32189 | 28.24 | 320.0 | -291.8 | -251.8 | -291.8 | -3.10 | 28.18 | 31.34 | 3.16 |
| JJJJ-O* | 25-32190-1 | 28.80 | 36.3 | -7.5 | -9.2 | -66.2 | 0.59 | 22.55 | 28.21 | 5.66 |
| JJJJ-shall | 25-32190-1 | 28.80 | 225.8 | -197.0 | -161.2 | -197.0 | 4.88 | 20.49 | 23.92 | 3.43 |
| JJJJ-deep | 25-32190-1 | 28.80 | 395.0 | -366.2 | -336.2 | -366.2 | -3.03 | 28.47 | 31.83 | 3.36 |
| *Impoundments 1&2 Bedrock Wells* | | | | | | | | | | |
| FLOD-W2BS | 25-67733 | 26.12 | 40.0 | -13.9 | -0.9 | -15.9 | 5.13 | 20.99 | NA | NA |

Notes:
NA - Not Available
NM - Not Measured
ft BTOC - feet below top of casing
ft msl - feet mean sea level
* denotes open bedrock well
- Water level at well MJ was not gauged because modifications made by well owner prevent access.
- Beginning with the second quarter 2008 sampling event artesian flow at wells IIII-deep and JJJJ-deep will be measured.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 01-MW-01 5/18/2011 ug/l Peri Pump | 01-MW-01 L 5/18/2011 ug/l PDB | 01-MW-01 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | --- | 5 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | --- | 5 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | --- | 5 U | 1 U |
| 1,1-Dichloroethane | 50 | | --- | 5 U | 1 U |
| 1,1-Dichloroethene | 1 | | --- | 5 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | --- | 2.9 J | 0.79 J |
| 1,2-Dibromo-3-chloropropane | 0.02 | | --- | 50 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | --- | 10 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | --- | **872 Y** | 108 |
| 1,2-Dichloroethane | 2 | | --- | 5 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | --- | 5 U | 1 U |
| 1,2-Dichloropropane | 1 | | --- | 5 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | --- | 25 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | --- | 5.2 | 1.1 |
| 1,4-Dichlorobenzene | 75 | | --- | 57.8 | 10.6 |
| 1,4-Dioxane | NA | | 2.1 U[3] | --- | --- |
| 2-Butanone | 300 | | --- | 50 U | 10 U |
| 2-Chlorotoluene | NA | | --- | 25 U | 5 U |
| 2-Hexanone | 100 | | --- | 25 U | 5 U |
| 2-Nitropropane | NA | | --- | 50 R | 10 R |
| 4-Chlorotoluene | NA | | --- | 25 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | --- | 25 U | 5 U |
| Acetone | 6000 | | --- | 50 U | 4.9 J |
| Acrolein | 4 | | --- | 250 U | 50 U |
| Acrylonitrile | 2 | | --- | 250 U | 50 U |
| Benzene | 1 | | **---** | **3040 Y** | **150 Y** |
| Bromodichloromethane | 1 | | --- | 5 U | 1 U |
| Bromoform | 4 | | --- | 20 U | 4 U |
| Bromomethane | 10 | | --- | 10 U | 2 U |
| Carbon Disulfide | 700 | | --- | 10 U | 2 U |
| Carbon Tetrachloride | 1 | | --- | 5 U | 1 U |
| Chlorobenzene | 50 | | --- | 26.9 | 2.2 |
| Chlorobromomethane | NA | | --- | 25 U | 5 U |
| Chloroethane | 100 | | --- | 5 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 01-MW-01 5/18/2011 ug/l Peri Pump | 01-MW-01 L 5/18/2011 ug/l PDB | 01-MW-01 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | --- | 5 U | 1 U |
| Chloromethane | 100 | | --- | 5 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | --- | 5 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | --- | 5 U | 1 U |
| Cyclohexane | NA | | --- | 25 U | 5 U |
| Dibromochloromethane | 1 | | --- | 5 U | 1 U |
| Dichlorodifluoromethane | 1000 | | --- | 25 U | 5 U |
| Diisopropyl ether | 20000 | | --- | 25 U | 5 U |
| Ethyl acetate | 6000 | | --- | 25 U | 5 U |
| Ethyl Acrylate | NA | | --- | 25 U | 5 U |
| Ethyl ether | 1000 | | --- | 2.6 J | 5 U |
| Ethylbenzene | 700 | | --- | 2.3 J | 0.39 J |
| Freon 113 | NA | | --- | 25 U | 5 U |
| Isopropylbenzene | 700 | | --- | 10 U | 0.32 J |
| Methyl acetate | 7000 | | --- | 25 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | --- | 5 U | 1 U |
| Methylacrylonitrile | NA | | --- | 50 U | 10 U |
| Methylcyclohexane | NA | | --- | 25 U | 5 U |
| Methylene Chloride | 3 | | --- | 10 U | 2 U |
| o-Xylene | NA | | --- | 5.5 | 0.6 J |
| Styrene | 100 | | --- | 25 U | 5 U |
| Tetrachloroethene | 1 | | --- | 5 U | 1 U |
| Toluene | 600 | | --- | 4.3 J | 0.95 J |
| trans-1,2-Dichloroethene | 100 | | --- | 5 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | --- | 5 U | 1 U |
| Trichloroethene | 1 | | --- | 5 U | 1 U |
| Trichlorofluoromethane | 2000 | | --- | 25 U | 5 U |
| Vinyl Chloride | 1 | | --- | 5 U | 1 U |
| Xylene (Total) | 1000 | | --- | 7.4 | 0.95 J |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 01-MW-02 5/18/2011 ug/l Peri Pump | 01-MW-02 L 5/18/2011 ug/l PDB | 01-MW-02 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | --- | 250 U | 250 U |
| 1,1,2,2-Tetrachloroethane | 1 | | --- | 250 U | 250 U |
| 1,1,2-Trichloroethane | 3 | | --- | 250 U | 250 U |
| 1,1-Dichloroethane | 50 | | --- | 250 U | 250 U |
| 1,1-Dichloroethene | 1 | | --- | 250 U | 250 U |
| 1,2,4-Trichlorobenzene | 9 | | --- | **156 J Y** | **141 J Y** |
| 1,2-Dibromo-3-chloropropane | 0.02 | | --- | 2500 U | 2500 U |
| 1,2-Dibromoethane | 0.03 | | --- | 500 U | 500 U |
| 1,2-Dichlorobenzene | 600 | | --- | **21700 Y** | **22700 Y** |
| 1,2-Dichloroethane | 2 | | --- | 250 U | 250 U |
| 1,2-Dichloroethene (total) | NA | | --- | 250 U | 250 U |
| 1,2-Dichloropropane | 1 | | --- | 250 U | 250 U |
| 1,3,5-Trimethylbenzene | NA | | --- | 137 J | 129 J |
| 1,3-Dichlorobenzene | 600 | | --- | 132 J | 134 J |
| 1,4-Dichlorobenzene | 75 | | --- | **1750 Y** | **1800 Y** |
| 1,4-Dioxane | NA | | 2.1 U[3] | --- | --- |
| 2-Butanone | 300 | | --- | 2500 U | 2500 U |
| 2-Chlorotoluene | NA | | --- | 1300 U | 1300 U |
| 2-Hexanone | 100 | | --- | 1300 U | 1300 U |
| 2-Nitropropane | NA | | --- | 2500 R | 2500 R |
| 4-Chlorotoluene | NA | | --- | 1300 U | 1300 U |
| 4-Methyl-2-pentanone | 100 | | --- | 1300 U | 1300 U |
| Acetone | 6000 | | --- | 1910 J | 1290 J |
| Acrolein | 4 | | --- | 13000 U | 13000 U |
| Acrylonitrile | 2 | | --- | 13000 U | 13000 U |
| Benzene | 1 | | **---** | **127000 Y** | **119000 Y** |
| Bromodichloromethane | 1 | | --- | 250 U | 250 U |
| Bromoform | 4 | | --- | 1000 U | 1000 U |
| Bromomethane | 10 | | --- | 500 U | 500 U |
| Carbon Disulfide | 700 | | --- | 173 J | 153 J |
| Carbon Tetrachloride | 1 | | --- | 250 U | 250 U |
| Chlorobenzene | 50 | | --- | **1300 Y** | **1320 Y** |
| Chlorobromomethane | NA | | --- | 1300 U | 1300 U |
| Chloroethane | 100 | | --- | 250 U | 250 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 01-MW-02 5/18/2011 ug/l Peri Pump | 01-MW-02 L 5/18/2011 ug/l PDB | 01-MW-02 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | --- | 250 U | 250 U |
| Chloromethane | 100 | | --- | **384 Y** | **380 Y** |
| cis-1,2-Dichloroethene | 70 | | --- | 250 U | 250 U |
| cis-1,3-Dichloropropylene | 1 | | --- | 250 U | 250 U |
| Cyclohexane | NA | | --- | 1300 U | 1300 U |
| Dibromochloromethane | 1 | | --- | 250 U | 250 U |
| Dichlorodifluoromethane | 1000 | | --- | 1300 U | 1300 U |
| Diisopropyl ether | 20000 | | --- | 1300 U | 1300 U |
| Ethyl acetate | 6000 | | --- | 1300 U | 1300 U |
| Ethyl Acrylate | NA | | --- | 1300 U | 1300 U |
| Ethyl ether | 1000 | | --- | 1300 U | 1300 U |
| Ethylbenzene | 700 | | --- | 83.3 J | 82 J |
| Freon 113 | NA | | --- | 1300 U | 1300 U |
| Isopropylbenzene | 700 | | --- | 500 U | 500 U |
| Methyl acetate | 7000 | | --- | 1300 U | 1300 U |
| Methyl tert butyl ether (MTBE) | 70 | | --- | 250 U | 250 U |
| Methylacrylonitrile | NA | | --- | 2500 U | 2500 U |
| Methylcyclohexane | NA | | --- | 1300 U | 1300 U |
| Methylene Chloride | 3 | | --- | 500 U | 500 U |
| o-Xylene | NA | | --- | 303 | 279 |
| Styrene | 100 | | --- | 1300 U | 1300 U |
| Tetrachloroethene | 1 | | --- | 250 U | 250 U |
| Toluene | 600 | | --- | **7750 Y** | **7360 Y** |
| trans-1,2-Dichloroethene | 100 | | --- | 250 U | 250 U |
| trans-1,3-Dichloropropene | 1 | | --- | 250 U | 250 U |
| Trichloroethene | 1 | | --- | 250 U | 250 U |
| Trichlorofluoromethane | 2000 | | --- | 1300 U | 1300 U |
| Vinyl Chloride | 1 | | --- | 250 U | 250 U |
| Xylene (Total) | 1000 | | --- | **1090 Y** | **1020 Y** |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3 - Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 01-MW-03 5/18/2011 ug/l Peri Pump | 01-MW-03 L 5/18/2011 ug/l PDB | 01-MW-03 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | --- | 1000 U | 1000 U |
| 1,1,2,2-Tetrachloroethane | 1 | | --- | 1000 U | 1000 U |
| 1,1,2-Trichloroethane | 3 | | --- | 1000 U | 1000 U |
| 1,1-Dichloroethane | 50 | | --- | 1000 U | 1000 U |
| 1,1-Dichloroethene | 1 | | --- | 1000 U | 1000 U |
| 1,2,4-Trichlorobenzene | 9 | | --- | 5000 U | 5000 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | --- | 10000 U | 10000 U |
| 1,2-Dibromoethane | 0.03 | | --- | 2000 U | 2000 U |
| 1,2-Dichlorobenzene | 600 | | --- | **1880 Y** | **2000 Y** |
| 1,2-Dichloroethane | 2 | | --- | 1000 U | 1000 U |
| 1,2-Dichloroethene (total) | NA | | --- | 1000 U | 1000 U |
| 1,2-Dichloropropane | 1 | | --- | 1000 U | 1000 U |
| 1,3,5-Trimethylbenzene | NA | | --- | 5000 U | 5000 U |
| 1,3-Dichlorobenzene | 600 | | --- | 1000 U | 1000 U |
| 1,4-Dichlorobenzene | 75 | | --- | 1000 U | 1000 U |
| 1,4-Dioxane | NA | | 2.1 U[3] | --- | --- |
| 2-Butanone | 300 | | --- | 10000 U | 10000 U |
| 2-Chlorotoluene | NA | | --- | 5000 U | 5000 U |
| 2-Hexanone | 100 | | --- | 5000 U | 5000 U |
| 2-Nitropropane | NA | | --- | 10000 R | 10000 R |
| 4-Chlorotoluene | NA | | --- | 5000 U | 5000 U |
| 4-Methyl-2-pentanone | 100 | | --- | 5000 U | 5000 U |
| Acetone | 6000 | | --- | 10000 U | 10000 U |
| Acrolein | 4 | | --- | 50000 U | 50000 U |
| Acrylonitrile | 2 | | --- | 50000 U | 50000 U |
| Benzene | 1 | | **---** | **254000 Y** | **248000 Y** |
| Bromodichloromethane | 1 | | --- | 1000 U | 1000 U |
| Bromoform | 4 | | --- | 4000 U | 4000 U |
| Bromomethane | 10 | | --- | 2000 U | 2000 U |
| Carbon Disulfide | 700 | | --- | 2000 U | 2000 U |
| Carbon Tetrachloride | 1 | | --- | 1000 U | 1000 U |
| Chlorobenzene | 50 | | --- | 1000 U | 1000 U |
| Chlorobromomethane | NA | | --- | 5000 U | 5000 U |
| Chloroethane | 100 | | --- | 1000 U | 1000 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 01-MW-03 5/18/2011 ug/l Peri Pump | 01-MW-03 L 5/18/2011 ug/l PDB | 01-MW-03 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | --- | 1000 U | 1000 U |
| Chloromethane | 100 | | --- | 1000 U | 1000 U |
| cis-1,2-Dichloroethene | 70 | | --- | 1000 U | 1000 U |
| cis-1,3-Dichloropropylene | 1 | | --- | 1000 U | 1000 U |
| Cyclohexane | NA | | --- | 5000 U | 5000 U |
| Dibromochloromethane | 1 | | --- | 1000 U | 1000 U |
| Dichlorodifluoromethane | 1000 | | --- | 5000 U | 5000 U |
| Diisopropyl ether | 20000 | | --- | 5000 U | 5000 U |
| Ethyl acetate | 6000 | | --- | 5000 U | 5000 U |
| Ethyl Acrylate | NA | | --- | 5000 U | 5000 U |
| Ethyl ether | 1000 | | --- | 5000 U | 5000 U |
| Ethylbenzene | 700 | | --- | 1000 U | 1000 U |
| Freon 113 | NA | | --- | 5000 U | 5000 U |
| Isopropylbenzene | 700 | | --- | 2000 U | 2000 U |
| Methyl acetate | 7000 | | --- | 5000 U | 5000 U |
| Methyl tert butyl ether (MTBE) | 70 | | --- | 1000 U | 1000 U |
| Methylacrylonitrile | NA | | --- | 10000 U | 10000 U |
| Methylcyclohexane | NA | | --- | 5000 U | 5000 U |
| Methylene Chloride | 3 | | --- | 2000 U | 2000 U |
| o-Xylene | NA | | --- | 647 J | 687 J |
| Styrene | 100 | | --- | 5000 U | 5000 U |
| Tetrachloroethene | 1 | | --- | 1000 U | 1000 U |
| Toluene | 600 | | --- | **25100 Y** | **25200 Y** |
| trans-1,2-Dichloroethene | 100 | | --- | 1000 U | 1000 U |
| trans-1,3-Dichloropropene | 1 | | --- | 1000 U | 1000 U |
| Trichloroethene | 1 | | --- | 1000 U | 1000 U |
| Trichlorofluoromethane | 2000 | | --- | 5000 U | 5000 U |
| Vinyl Chloride | 1 | | --- | 1000 U | 1000 U |
| Xylene (Total) | 1000 | | --- | **2840 Y** | **2710 Y** |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 19R 4/28/2011 ug/l PDB | 21R 4/27/2011 ug/l PDB | 28R 4/28/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 10 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 10 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 10 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 10 U | 1 U | 0.71 J |
| 1,1-Dichloroethene | 1 | | 10 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 50 U | 5 U | 1 J |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 100 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 20 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 10 U | 1 U | 27.2 |
| 1,2-Dichloroethane | 2 | | 10 U | 1 U | **5.4 Y** |
| 1,2-Dichloroethene (total) | NA | | 10 U | 1 U | 0.52 J |
| 1,2-Dichloropropane | 1 | | 10 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 50 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 10 U | 1 U | 0.45 J |
| 1,4-Dichlorobenzene | 75 | | 10 U | 1 U | 2.9 |
| 1,4-Dioxane | NA | | 1300 U | --- | 130 U |
| 2-Butanone | 300 | | 100 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 50 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 50 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 100 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 50 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 50 U | 5 U | 5 U |
| Acetone | 6000 | | 100 U | 10 U | 5.9 J |
| Acrolein | 4 | | 500 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 500 U | 50 U | 50 U |
| Benzene | 1 | | **8.9 J Y** | 1 U | **1.8 Y** |
| Bromodichloromethane | 1 | | 10 U | 1 U | 1 U |
| Bromoform | 4 | | 40 U | 4 U | 4 U |
| Bromomethane | 10 | | 20 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 20 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 10 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 6.7 J | 1 U | 40.6 |
| Chlorobromomethane | NA | | 50 U | 5 U | 5 U |
| Chloroethane | 100 | | 10 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 19R 4/28/2011 ug/l PDB | 21R 4/27/2011 ug/l PDB | 28R 4/28/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 10 U | 1 U | 1 U |
| Chloromethane | 100 | | 10 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 10 U | 1 U | 0.52 J |
| cis-1,3-Dichloropropylene | 1 | | 10 U | 1 U | 1 U |
| Cyclohexane | NA | | 50 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 10 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 50 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 50 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 50 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 50 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 50 U | 5 U | 118 |
| Ethylbenzene | 700 | | 10 U | 1 U | 1 U |
| Freon 113 | NA | | 50 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 20 U | 2 U | 0.58 J |
| Methyl acetate | 7000 | | 50 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 10 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 100 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 50 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 20 U | 2 U | 2 U |
| o-Xylene | NA | | 10 U | 1 U | 0.35 J |
| Styrene | 100 | | 50 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 10 U | 1 U | 1 U |
| Toluene | 600 | | 33.7 | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 10 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 10 U | 1 U | 1 U |
| Trichloroethene | 1 | | 10 U | 1 U | 0.94 J |
| Trichlorofluoromethane | 2000 | | 50 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 10 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 10 U | 1 U | 0.35 J |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 32R | 34R | 38R |
|---|---|---|---|---|---|
| | | Sample Date | 5/13/2011 | 4/28/2011 | 4/29/2011 |
| | | Unit | ug/l | ug/l | ug/l |
| | | Sample Method | PDB | PDB | PDB |
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 2.3 J | 8 |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1.1 | 27.7 | 10.2 |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 0.99 J |
| 1,3-Dichlorobenzene | 600 | | 0.93 J | 37.2 | 1.9 |
| 1,4-Dichlorobenzene | 75 | | 3 | 14.3 | 34.4 |
| 1,4-Dioxane | NA | | --- | 130 U | 2 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 R | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 5.1 J | 4.8 J | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | **4.9 Y** | **21.3 Y** |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 29.7 | 39.2 | **81.5 Y** |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 32R | 34R | 38R |
|---|---|---|---|---|---|
| | | Sample Date | 5/13/2011 | 4/28/2011 | 4/29/2011 |
| | | Unit | ug/l | ug/l | ug/l |
| | | Sample Method | PDB | PDB | PDB |
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 1.9 J | 5 U |
| Ethylbenzene | 700 | | 1 U | 2.2 | 5.4 |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 0.38 J | 0.62 J | 7 |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 0.48 J |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1.5 | 8 |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1 U |
| Toluene | 600 | | 1 U | 0.97 J | 1.7 |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 2.8 | 12.5 |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 42R 4/30/2011 ug/l PDB | AAA 4/29/2011 ug/l PDB | CCC-R 4/30/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 2 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 2 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 2 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 2 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 2 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 7.8 J | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 20 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 4 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 154 | 0.27 J | 1 U |
| 1,2-Dichloroethane | 2 | | 2 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1.4 J | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 2 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 1.4 J | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 65.4 | 0.99 J | 1 U |
| 1,4-Dichlorobenzene | 75 | | 43.6 | 1 U | 1 U |
| 1,4-Dioxane | NA | | 2.2 U | 2 U | 2 U |
| 2-Butanone | 300 | | 20 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 10 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 10 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 20 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 10 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 10 U | 5 U | 5 U |
| Acetone | 6000 | | 20 U | 10 U | 7.8 J |
| Acrolein | 4 | | 100 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 100 U | 50 U | 50 U |
| Benzene | 1 | | **29.4 Y** | 1 U | 1 U |
| Bromodichloromethane | 1 | | 2 U | 1 U | 1 U |
| Bromoform | 4 | | 8 U | 4 U | 4 U |
| Bromomethane | 10 | | 4 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 4 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 2 U | 1 U | 1 U |
| Chlorobenzene | 50 | | **843 Y** | 2.2 | 1 U |
| Chlorobromomethane | NA | | 10 U | 5 U | 5 U |
| Chloroethane | 100 | | 2 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | 42R 4/30/2011 ug/l PDB | AAA 4/29/2011 ug/l PDB | CCC-R 4/30/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 2 U | 0.3 J | 1 U |
| Chloromethane | 100 | | 2 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 0.66 J | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 2 U | 1 U | 1 U |
| Cyclohexane | NA | | 1.7 J | 5 U | 5 U |
| Dibromochloromethane | 1 | | 2 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 10 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 10 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 10 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 10 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 3.4 J | 5 U | 5 U |
| Ethylbenzene | 700 | | 65.5 | 1 U | 1 U |
| Freon 113 | NA | | 10 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 19.9 | 0.22 J | 2 U |
| Methyl acetate | 7000 | | 10 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 2 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 20 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 4.4 J | 5 U | 5 U |
| Methylene Chloride | 3 | | 4 U | 2 U | 2 U |
| o-Xylene | NA | | 40.7 | 1 U | 1 U |
| Styrene | 100 | | 10 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 2 U | 1 U | 1 U |
| Toluene | 600 | | 7.7 | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 0.77 J | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 2 U | 1 U | 1 U |
| Trichloroethene | 1 | | 0.48 J | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 10 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 2 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 48.7 | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | EEE-R 4/30/2011 ug/l PDB | EEE-R DUP 4/30/2011 ug/l PDB | FLOD-W1S 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 100 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 100 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 100 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 100 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 100 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | **17.5 J Y** |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 1000 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 200 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | **3050 Y** |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 100 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 100 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 100 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 34.7 J |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 24.3 J |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | **273 Y** |
| 1,4-Dioxane | NA | | 2 U | --- | 2 U |
| 2-Butanone | 300 | | 10 U | 10 U | 1000 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 500 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 500 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 1000 R |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 500 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 500 U |
| Acetone | 6000 | | 10 U | 10 U | 1000 U |
| Acrolein | 4 | | 50 U | 50 U | 5000 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 5000 U |
| Benzene | 1 | | 1 U | 1 U | **40400 Y** |
| Bromodichloromethane | 1 | | 1 U | 1 U | 100 U |
| Bromoform | 4 | | 4 U | 4 U | 400 U |
| Bromomethane | 10 | | 2 U | 2 U | 200 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 200 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 100 U |
| Chlorobenzene | 50 | | 1 U | 1 U | **190 Y** |
| Chlorobromomethane | NA | | 5 U | 5 U | 500 U |
| Chloroethane | 100 | | 1 U | 1 U | 100 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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2 - Valved tubing sampling system.
3 - Sample collected from peristalatic pump, result reported from SVOC analysis.

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**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | EEE-R 4/30/2011 ug/l PDB | EEE-R DUP 4/30/2011 ug/l PDB | FLOD-W1S 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 100 U |
| Chloromethane | 100 | | 1 U | 1 U | 40.5 J |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 100 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 100 U |
| Cyclohexane | NA | | 5 U | 5 U | 500 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 100 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 500 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 500 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 500 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 500 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 500 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 100 U |
| Freon 113 | NA | | 5 U | 5 U | 500 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 200 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 500 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 100 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 1000 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 500 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 200 U |
| o-Xylene | NA | | 1 U | 1 U | 68.7 J |
| Styrene | 100 | | 5 U | 5 U | 500 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 100 U |
| Toluene | 600 | | 1 U | 1 U | **1650 Y** |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 100 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 100 U |
| Trichloroethene | 1 | | 1 U | 1 U | 100 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 500 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 100 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 231 |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | FLOD-W2BS 5/19/2011 ug/l PDB | FLOD-W2S 5/19/2011 ug/l PDB | III 4/29/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 25 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 25 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 25 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 25 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 25 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 0.79 J | 130 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 250 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 50 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | **1670 Y** | 183 | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 25 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 25 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 25 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 130 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 16.7 | 25 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | **101 Y** | 8.8 J | 1 U |
| 1,4-Dioxane | NA | | 2 U | 2 U | 2 U |
| 2-Butanone | 300 | | 10 U | 250 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 130 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 130 U | 5 U |
| 2-Nitropropane | NA | | 10 R | 250 R | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 130 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 130 U | 5 U |
| Acetone | 6000 | | 10 U | 250 U | 10 U |
| Acrolein | 4 | | 50 U | 1300 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 1300 U | 50 U |
| Benzene | 1 | | **18 Y** | **16400 Y** | 1 U |
| Bromodichloromethane | 1 | | 1 U | 25 U | 1 U |
| Bromoform | 4 | | 4 U | 100 U | 4 U |
| Bromomethane | 10 | | 2 U | 50 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 50 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 25 U | 1 U |
| Chlorobenzene | 50 | | **124 Y** | 25 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 130 U | 5 U |
| Chloroethane | 100 | | 1 U | 25 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | FLOD-W2BS 5/19/2011 ug/l PDB | FLOD-W2S 5/19/2011 ug/l PDB | III 4/29/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 25 U | 1 U |
| Chloromethane | 100 | | 1 U | 25 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 25 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 25 U | 1 U |
| Cyclohexane | NA | | 5 U | 130 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 25 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 130 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 130 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 130 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 130 U | 5 U |
| Ethyl ether | 1000 | | 73.9 | 130 U | 5 U |
| Ethylbenzene | 700 | | 0.47 J | 18.2 J | 1 U |
| Freon 113 | NA | | 5 U | 130 U | 5 U |
| Isopropylbenzene | 700 | | 1.4 J | 28.5 J | 2 U |
| Methyl acetate | 7000 | | 5 U | 130 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 0.99 J | 25 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 250 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 130 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 50 U | 2 U |
| o-Xylene | NA | | 2.2 | 20 J | 1 U |
| Styrene | 100 | | 5 U | 130 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 25 U | 1 U |
| Toluene | 600 | | 1.9 | 25 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 25 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 25 U | 1 U |
| Trichloroethene | 1 | | 1 U | 25 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 130 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 25 U | 1 U |
| Xylene (Total) | 1000 | | 2.9 | 20 J | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | KKK 4/29/2011 ug/l PDB | MW-1A 4/30/2011 ug/l Submerssible Pump | MW-2 UPPER 4/28/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 20 U | 20 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 20 U | 20 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 20 U | 20 U |
| 1,1-Dichloroethane | 50 | | 1 U | 20 U | 20 U |
| 1,1-Dichloroethene | 1 | | 1 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 100 U | **12.3 J Y** |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 200 U | 200 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 40 U | 40 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 124 | 233 |
| 1,2-Dichloroethane | 2 | | 1 U | 20 U | 20 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 20 U | 20 U |
| 1,2-Dichloropropane | 1 | | 1 U | 20 U | 20 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 206 | 62.3 J |
| 1,3-Dichlorobenzene | 600 | | 1 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 16.6 J | 19.6 J |
| 1,4-Dioxane | NA | | 2 U | 10 U | 2500 U |
| 2-Butanone | 300 | | 10 U | 200 U | 200 U |
| 2-Chlorotoluene | NA | | 5 U | 100 U | 100 U |
| 2-Hexanone | 100 | | 5 U | 100 U | 100 U |
| 2-Nitropropane | NA | | 10 U | 200 U | 200 U |
| 4-Chlorotoluene | NA | | 5 U | 100 U | 100 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 100 U | 100 U |
| Acetone | 6000 | | 10 U | 200 U | 200 U |
| Acrolein | 4 | | 50 U | 1000 U | 1000 U |
| Acrylonitrile | 2 | | 50 U | 1000 U | 1000 U |
| Benzene | 1 | | 1 U | **502 Y** | **3460 Y** |
| Bromodichloromethane | 1 | | 1 U | 20 U | 20 U |
| Bromoform | 4 | | 4 U | 80 U | 80 U |
| Bromomethane | 10 | | 2 U | 40 U | 40 U |
| Carbon Disulfide | 700 | | 2 U | 40 U | 40 U |
| Carbon Tetrachloride | 1 | | 1 U | 20 U | 20 U |
| Chlorobenzene | 50 | | 1 U | **7690 Y** | **306 Y** |
| Chlorobromomethane | NA | | 5 U | 100 U | 100 U |
| Chloroethane | 100 | | 1 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | KKK 4/29/2011 ug/l PDB | MW-1A 4/30/2011 ug/l Submerssible Pump | MW-2 UPPER 4/28/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 20 U | 20 U |
| Chloromethane | 100 | | 1 U | 20 U | 20 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 20 U | 20 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 20 U | 20 U |
| Cyclohexane | NA | | 5 U | 100 U | 100 U |
| Dibromochloromethane | 1 | | 1 U | 20 U | 20 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 100 U | 100 U |
| Diisopropyl ether | 20000 | | 5 U | 100 U | 100 U |
| Ethyl acetate | 6000 | | 5 U | 100 U | 100 U |
| Ethyl Acrylate | NA | | 5 U | 100 U | 100 U |
| Ethyl ether | 1000 | | 5 U | 100 U | 55.3 J |
| Ethylbenzene | 700 | | 1 U | 366 | 56.9 |
| Freon 113 | NA | | 5 U | 100 U | 100 U |
| Isopropylbenzene | 700 | | 2 U | 11.3 J | 6.5 J |
| Methyl acetate | 7000 | | 5 U | 100 U | 100 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 20 U | 20 U |
| Methylacrylonitrile | NA | | 10 U | 200 U | 200 U |
| Methylcyclohexane | NA | | 5 U | 100 U | 100 U |
| Methylene Chloride | 3 | | 2 U | 40 U | 40 U |
| o-Xylene | NA | | 1 U | 131 | 169 |
| Styrene | 100 | | 5 U | 100 U | 100 U |
| Tetrachloroethene | 1 | | 1 U | 20 U | 20 U |
| Toluene | 600 | | 1 U | **1590 Y** | **1300 Y** |
| trans-1,2-Dichloroethene | 100 | | 1 U | 20 U | 20 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 20 U | 20 U |
| Trichloroethene | 1 | | 1 U | 20 U | 20 U |
| Trichlorofluoromethane | 2000 | | 5 U | 100 U | 100 U |
| Vinyl Chloride | 1 | | 1 U | 20 U | 20 U |
| Xylene (Total) | 1000 | | 1 U | 350 | 492 |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | MW-22R 4/30/2011 ug/l Submerssible Pump | O-R 4/27/2011 ug/l PDB | PW-2 4/14/2011 ug/l Tap[1] |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 2.5 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 2.5 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 2.5 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 2.5 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 2.5 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | **98.2 Y** |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | --- |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | --- |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 73.1 |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 2.5 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1.9 J |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 2.5 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | --- |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 92.9 |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 49.3 |
| 1,4-Dioxane | NA | | 2 U | --- | --- |
| 2-Butanone | 300 | | 10 U | 10 U | 25 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | --- |
| 2-Hexanone | 100 | | 5 U | 5 U | 13 U |
| 2-Nitropropane | NA | | 10 U | 10 U | --- |
| 4-Chlorotoluene | NA | | 5 U | 5 U | --- |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 13 U |
| Acetone | 6000 | | 10 U | 10 U | 25 U |
| Acrolein | 4 | | 50 U | 50 U | --- |
| Acrylonitrile | 2 | | 50 U | 50 U | --- |
| Benzene | 1 | | **26.2 Y** | 1 U | **373 Y** |
| Bromodichloromethane | 1 | | 1 U | 1 U | 2.5 U |
| Bromoform | 4 | | 4 U | 4 U | 10 U |
| Bromomethane | 10 | | 2 U | 2 U | 5 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | **3150 Y** |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 2.5 U |
| Chlorobenzene | 50 | | 9.9 | 1 U | **1010 Y** |
| Chlorobromomethane | NA | | 5 U | 5 U | --- |
| Chloroethane | 100 | | 1 U | 1 U | 2.5 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | MW-22R 4/30/2011 ug/l Submerssible Pump | O-R 4/27/2011 ug/l PDB | PW-2 4/14/2011 ug/l Tap[1] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 2.5 U |
| Chloromethane | 100 | | 1 U | 1 U | 2.5 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1.9 J |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 2.5 U |
| Cyclohexane | NA | | 5 U | 5 U | --- |
| Dibromochloromethane | 1 | | 1 U | 1 U | 2.5 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | --- |
| Diisopropyl ether | 20000 | | 5 U | 5 U | --- |
| Ethyl acetate | 6000 | | 5 U | 5 U | --- |
| Ethyl Acrylate | NA | | 5 U | 5 U | --- |
| Ethyl ether | 1000 | | 5 U | 5 U | --- |
| Ethylbenzene | 700 | | 1 U | 1 U | 3.1 |
| Freon 113 | NA | | 5 U | 5 U | --- |
| Isopropylbenzene | 700 | | 2 U | 2 U | --- |
| Methyl acetate | 7000 | | 5 U | 5 U | --- |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | --- |
| Methylacrylonitrile | NA | | 10 U | 10 U | --- |
| Methylcyclohexane | NA | | 5 U | 5 U | --- |
| Methylene Chloride | 3 | | 2 U | 2 U | 5 U |
| o-Xylene | NA | | 0.54 J | 1 U | --- |
| Styrene | 100 | | 5 U | 5 U | 13 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 2.5 U |
| Toluene | 600 | | 0.27 J | 1 U | 3.9 |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 2.5 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 2.5 U |
| Trichloroethene | 1 | | 1 U | 1 U | 2.5 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | --- |
| Vinyl Chloride | 1 | | 1 U | 1 U | 2.5 U |
| Xylene (Total) | 1000 | | 1 | 1 U | 6.2 |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
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[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PW-3 4/26/2011 ug/l Tap[1] | PZ-12-1 L 5/18/2011 ug/l PDB | PZ-12-1 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 10 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 10 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 10 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 10 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 10 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | **85.1 Y** | 0.3 J | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 100 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 20 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 82.6 | 1.1 | 0.53 J |
| 1,2-Dichloroethane | 2 | | 10 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 10 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 10 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 50 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 107 | 0.47 J | 0.33 J |
| 1,4-Dichlorobenzene | 75 | | 59.5 | 0.59 J | 0.32 J |
| 1,4-Dioxane | NA | | 2 U | 2 U | --- |
| 2-Butanone | 300 | | 100 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 50 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 50 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 100 U | 10 R | 10 R |
| 4-Chlorotoluene | NA | | 50 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 50 U | 5 U | 5 U |
| Acetone | 6000 | | 100 U | 6.4 J | 5.1 J |
| Acrolein | 4 | | 500 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 500 U | 50 U | 50 U |
| Benzene | 1 | | **418 Y** | **1.3 Y** | 0.28 J |
| Bromodichloromethane | 1 | | 10 U | 1 U | 1 U |
| Bromoform | 4 | | 40 U | 4 U | 4 U |
| Bromomethane | 10 | | 20 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | **2890 Y** | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 10 U | 0.75 J | 0.82 J |
| Chlorobenzene | 50 | | **861 Y** | 2.2 | 0.39 J |
| Chlorobromomethane | NA | | 50 U | 5 U | 5 U |
| Chloroethane | 100 | | 10 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PW-3 4/26/2011 ug/l Tap[1] | PZ-12-1 L 5/18/2011 ug/l PDB | PZ-12-1 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 10 U | 0.7 J | 0.66 J |
| Chloromethane | 100 | | 10 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 10 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 10 U | 1 U | 1 U |
| Cyclohexane | NA | | 50 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 10 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 50 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 50 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 50 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 50 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 23.5 J | 5 U | 5 U |
| Ethylbenzene | 700 | | 3 J | 1 U | 1 U |
| Freon 113 | NA | | 50 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 20 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 50 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 10 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 100 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 50 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 20 U | 2 U | 2 U |
| o-Xylene | NA | | 10 U | 1 U | 1 U |
| Styrene | 100 | | 50 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 10 U | 1 U | 1 U |
| Toluene | 600 | | 3.7 J | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 10 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 10 U | 1 U | 1 U |
| Trichloroethene | 1 | | 10 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 50 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 10 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 6 J | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-2 L 5/18/2011 ug/l PDB | PZ-12-2 U 5/18/2011 ug/l PDB | PZ-12-3 L 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 13.4 | 1 U | 0.44 J |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1.7 | 1 U | 1 U |
| 1,4-Dioxane | NA | | 2 U | --- | 2 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 R | 10 R | 10 R |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 8.1 J | 6.2 J | 5.2 J |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | **90.8 Y** | 0.7 J | **56.8 Y** |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 0.73 J | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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[1] - Sampled from tap inline with pump.
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[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-2 L 5/18/2011 ug/l PDB | PZ-12-2 U 5/18/2011 ug/l PDB | PZ-12-3 L 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-3 L DUP 5/18/2011 ug/l PDB | PZ-12-3 U 5/18/2011 ug/l PDB | PZ-12-4 L 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1000 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1000 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1000 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1000 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1000 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5000 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10000 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2000 U |
| 1,2-Dichlorobenzene | 600 | | 0.52 J | 0.3 J | **2490 Y** |
| 1,2-Dichloroethane | 2 | | 1 U | 1.4 | 1000 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1000 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1000 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 348 J |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1000 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1000 U |
| 1,4-Dioxane | NA | | 2 U | --- | 2 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10000 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5000 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5000 U |
| 2-Nitropropane | NA | | 10 R | 10 R | 10000 R |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5000 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5000 U |
| Acetone | 6000 | | 5.5 J | 6.9 J | 10000 U |
| Acrolein | 4 | | 50 U | 50 U | 50000 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50000 U |
| Benzene | 1 | | **53.8 Y** | **56 Y** | **238000 Y** |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1000 U |
| Bromoform | 4 | | 4 U | 4 U | 4000 U |
| Bromomethane | 10 | | 2 U | 2 U | 2000 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | **762 J Y** |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1000 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1000 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5000 U |
| Chloroethane | 100 | | 1 U | 1 U | 1000 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-3 L DUP 5/18/2011 ug/l PDB | PZ-12-3 U 5/18/2011 ug/l PDB | PZ-12-4 L 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1000 U |
| Chloromethane | 100 | | 1 U | 1 U | 1000 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1000 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1000 U |
| Cyclohexane | NA | | 5 U | 5 U | 5000 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1000 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5000 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5000 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5000 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5000 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5000 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1000 U |
| Freon 113 | NA | | 5 U | 5 U | 5000 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2000 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5000 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1000 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10000 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5000 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2000 U |
| o-Xylene | NA | | 1 U | 1 U | 957 J |
| Styrene | 100 | | 5 U | 5 U | 5000 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1000 U |
| Toluene | 600 | | 1 U | 1 U | **33100 Y** |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1000 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1000 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1000 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5000 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1000 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | **3830 Y** |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-4 U 5/18/2011 ug/l PDB | PZ-12-5 L 5/18/2011 ug/l PDB | PZ-12-5 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1000 U | 5 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1000 U | 5 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1000 U | 5 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1000 U | 5 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1000 U | 5 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5000 U | 25 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10000 U | 50 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2000 U | 10 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | **2810 Y** | 8.7 | 0.52 J |
| 1,2-Dichloroethane | 2 | | 1000 U | 5 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1000 U | 5 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1000 U | 5 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 398 J | 25 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1000 U | 5 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1000 U | 5 U | 1 U |
| 1,4-Dioxane | NA | | --- | 2 U | --- |
| 2-Butanone | 300 | | 10000 U | 50 U | 10 U |
| 2-Chlorotoluene | NA | | 5000 U | 25 U | 5 U |
| 2-Hexanone | 100 | | 5000 U | 25 U | 5 U |
| 2-Nitropropane | NA | | 10000 R | 50 R | 10 R |
| 4-Chlorotoluene | NA | | 5000 U | 25 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5000 U | 25 U | 5 U |
| Acetone | 6000 | | 10000 U | 50 U | 7.9 J |
| Acrolein | 4 | | 50000 U | 250 U | 50 U |
| Acrylonitrile | 2 | | 50000 U | 250 U | 50 U |
| Benzene | 1 | | **238000 Y** | **2950 Y** | **69.6 Y** |
| Bromodichloromethane | 1 | | 1000 U | 5 U | 1 U |
| Bromoform | 4 | | 4000 U | 20 U | 4 U |
| Bromomethane | 10 | | 2000 U | 10 U | 2 U |
| Carbon Disulfide | 700 | | **853 J Y** | 10 U | 2 U |
| Carbon Tetrachloride | 1 | | 1000 U | 5 U | 1 U |
| Chlorobenzene | 50 | | 1000 U | 2.1 J | 1 U |
| Chlorobromomethane | NA | | 5000 U | 25 U | 5 U |
| Chloroethane | 100 | | 1000 U | 5 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-4 U 5/18/2011 ug/l PDB | PZ-12-5 L 5/18/2011 ug/l PDB | PZ-12-5 U 5/18/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1000 U | 5 U | 1 U |
| Chloromethane | 100 | | 1000 U | 5 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1000 U | 5 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1000 U | 5 U | 1 U |
| Cyclohexane | NA | | 5000 U | 25 U | 5 U |
| Dibromochloromethane | 1 | | 1000 U | 5 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5000 U | 25 U | 5 U |
| Diisopropyl ether | 20000 | | 5000 U | 25 U | 5 U |
| Ethyl acetate | 6000 | | 5000 U | 25 U | 5 U |
| Ethyl Acrylate | NA | | 5000 U | 25 U | 5 U |
| Ethyl ether | 1000 | | 5000 U | 25 U | 5 U |
| Ethylbenzene | 700 | | 1000 U | 5 U | 1 U |
| Freon 113 | NA | | 5000 U | 25 U | 5 U |
| Isopropylbenzene | 700 | | 2000 U | 10 U | 2 U |
| Methyl acetate | 7000 | | 5000 U | 25 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1000 U | 5 U | 1 U |
| Methylacrylonitrile | NA | | 10000 U | 50 U | 10 U |
| Methylcyclohexane | NA | | 5000 U | 25 U | 5 U |
| Methylene Chloride | 3 | | 2000 U | 10 U | 2 U |
| o-Xylene | NA | | 964 J | 4 J | 1 U |
| Styrene | 100 | | 5000 U | 25 U | 5 U |
| Tetrachloroethene | 1 | | 1000 U | 5 U | 1 U |
| Toluene | 600 | | **35300 Y** | 163 | 5.2 |
| trans-1,2-Dichloroethene | 100 | | 1000 U | 5 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1000 U | 5 U | 1 U |
| Trichloroethene | 1 | | 1000 U | 5 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5000 U | 25 U | 5 U |
| Vinyl Chloride | 1 | | 1000 U | 5 U | 1 U |
| Xylene (Total) | 1000 | | **4080 Y** | 13 | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-6 L 5/18/2011 ug/l PDB | PZ-12-6 U 5/18/2011 ug/l PDB | SS P1 4/26/2011 ug/l Valve[2] |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 10 U | 5 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 10 U | 5 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 10 U | 5 U | 1 U |
| 1,1-Dichloroethane | 50 | | 10 U | 5 U | 1 U |
| 1,1-Dichloroethene | 1 | | 10 U | 5 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 50 U | 25 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 100 U | 50 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 20 U | 10 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 353 | 197 | 1 U |
| 1,2-Dichloroethane | 2 | | 10 U | 5 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 10 U | 5 U | 1 U |
| 1,2-Dichloropropane | 1 | | 10 U | 5 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 87.3 | 52.8 | 5 U |
| 1,3-Dichlorobenzene | 600 | | 3.5 J | 2.1 J | 1 U |
| 1,4-Dichlorobenzene | 75 | | 16.3 | 9.1 | 1 U |
| 1,4-Dioxane | NA | | 2 U | --- | 130 U |
| 2-Butanone | 300 | | 100 U | 50 U | 10 U |
| 2-Chlorotoluene | NA | | 50 U | 25 U | 5 U |
| 2-Hexanone | 100 | | 50 U | 25 U | 5 U |
| 2-Nitropropane | NA | | 100 R | 50 R | 10 U |
| 4-Chlorotoluene | NA | | 50 U | 25 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 50 U | 25 U | 5 U |
| Acetone | 6000 | | 100 U | 50 U | 10 U |
| Acrolein | 4 | | 500 U | 250 U | 50 U |
| Acrylonitrile | 2 | | 500 U | 250 U | 50 U |
| Benzene | 1 | | **8890 Y** | **3220 Y** | 1 U |
| Bromodichloromethane | 1 | | 10 U | 5 U | 1 U |
| Bromoform | 4 | | 40 U | 20 U | 4 U |
| Bromomethane | 10 | | 20 U | 10 U | 2 U |
| Carbon Disulfide | 700 | | 20 U | 10 U | 2 U |
| Carbon Tetrachloride | 1 | | 10 U | 5 U | 1 U |
| Chlorobenzene | 50 | | 7.8 J | 2.7 J | 1 U |
| Chlorobromomethane | NA | | 50 U | 25 U | 5 U |
| Chloroethane | 100 | | 10 U | 5 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | PZ-12-6 L 5/18/2011 ug/l PDB | PZ-12-6 U 5/18/2011 ug/l PDB | SS P1 4/26/2011 ug/l Valve[2] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 10 U | 5 U | 1 U |
| Chloromethane | 100 | | 10 U | 5 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 10 U | 5 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 10 U | 5 U | 1 U |
| Cyclohexane | NA | | 50 U | 25 U | 5 U |
| Dibromochloromethane | 1 | | 10 U | 5 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 50 U | 25 U | 5 U |
| Diisopropyl ether | 20000 | | 50 U | 25 U | 5 U |
| Ethyl acetate | 6000 | | 50 U | 25 U | 5 U |
| Ethyl Acrylate | NA | | 50 U | 25 U | 5 U |
| Ethyl ether | 1000 | | 11.5 J | 9.5 J | 5 U |
| Ethylbenzene | 700 | | 22.8 | 12.7 | 1 U |
| Freon 113 | NA | | 50 U | 25 U | 5 U |
| Isopropylbenzene | 700 | | 50.3 | 26 | 2 U |
| Methyl acetate | 7000 | | 50 U | 25 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 10 U | 5 U | 1 U |
| Methylacrylonitrile | NA | | 100 U | 50 U | 10 U |
| Methylcyclohexane | NA | | 50 U | 25 U | 5 U |
| Methylene Chloride | 3 | | 20 U | 10 U | 2 U |
| o-Xylene | NA | | 131 | 83.5 | 1 U |
| Styrene | 100 | | 50 U | 25 U | 5 U |
| Tetrachloroethene | 1 | | 10 U | 5 U | 1 U |
| Toluene | 600 | | 563 | 217 | 1 U |
| trans-1,2-Dichloroethene | 100 | | 10 U | 5 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 10 U | 5 U | 1 U |
| Trichloroethene | 1 | | 10 U | 5 U | 1 U |
| Trichlorofluoromethane | 2000 | | 50 U | 25 U | 5 U |
| Vinyl Chloride | 1 | | 10 U | 5 U | 1 U |
| Xylene (Total) | 1000 | | 468 | 288 | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | SS P1 DUP 4/26/2011 ug/l Valve[2] | SS P2 4/26/2011 ug/l Valve [2] | SS P3 4/26/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | SS P1 DUP 4/26/2011 ug/l Valve[2] | SS P2 4/26/2011 ug/l Valve [2] | SS P3 4/26/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | TFP-94-1R 4/27/2011 ug/l Valve [2] | TT P1 4/27/2011 ug/l Valve [2] | TT P2 4/27/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 5 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 5 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 5 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 5 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 5 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 3.1 J | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 50 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 10 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | **2180 Y** | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 5 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 5 U | 201 | 8.9 |
| 1,2-Dichloropropane | 1 | | 5 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 1.8 J | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 83 | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | **358 Y** | 1 U | 1 U |
| 1,4-Dioxane | NA | | --- | 130 U | 130 U |
| 2-Butanone | 300 | | 50 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 25 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 25 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 50 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 25 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 25 U | 5 U | 5 U |
| Acetone | 6000 | | 50 U | 10 U | 10 U |
| Acrolein | 4 | | 250 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 250 U | 50 U | 50 U |
| Benzene | 1 | | **79.7 Y** | 1 U | 1 U |
| Bromodichloromethane | 1 | | 5 U | 1 U | 1 U |
| Bromoform | 4 | | 20 U | 4 U | 4 U |
| Bromomethane | 10 | | 10 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 10 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 5 U | 1 U | 1 U |
| Chlorobenzene | 50 | | **3460 Y** | 1 U | 1 U |
| Chlorobromomethane | NA | | 25 U | 5 U | 5 U |
| Chloroethane | 100 | | 5 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | TFP-94-1R 4/27/2011 ug/l Valve [2] | TT P1 4/27/2011 ug/l Valve [2] | TT P2 4/27/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 5 U | 1 U | 1 U |
| Chloromethane | 100 | | 5 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 5 U | **195 Y** | 8.9 |
| cis-1,3-Dichloropropylene | 1 | | 5 U | 1 U | 1 U |
| Cyclohexane | NA | | 25 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 5 U | 1 U | 1 U |
| Dichlorodifluoromethane (CFC-12) | 1000 | | 25 U | 5 U | 5 U |
| DIISOPROPYL ETHER | 20000 | | 25 U | 5 U | 5 U |
| ETHYL ACETATE | 6000 | | 25 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 25 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 25 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 4.7 J | 1 U | 1 U |
| Freon 113 | NA | | 25 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 10 U | 2 U | 2 U |
| METHYL ACETATE | 7000 | | 25 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 5 U | 1 U | 1 U |
| METHYLACRYLONITRILE | NA | | 50 U | 10 U | 10 U |
| METHYLCYLOHEXANE | NA | | 3 J | 5 U | 5 U |
| Methylene Chloride | 3 | | 10 U | 2 U | 2 U |
| o-Xylene | NA | | 9.4 | 1 U | 1 U |
| Styrene | 100 | | 25 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 5 U | **28.6 Y** | **1.4 Y** |
| Toluene | 600 | | 2.8 J | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 5 U | 6.3 | 1 U |
| trans-1,3-Dichloropropene | 1 | | 5 U | 1 U | 1 U |
| Trichloroethene | 1 | | 5 U | **16.2 Y** | **1.6 Y** |
| Trichlorofluoromethane | 2000 | | 25 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 5 U | **4.8 Y** | 1 U |
| Xylene (Total) | 1000 | | 14.6 | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | TT P3 4/27/2011 ug/l Valve [2] | WW P1 4/27/2011 ug/l Valve [2] | WW P2 4/27/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 0.34 J | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100.00 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | TT P3 4/27/2011 ug/l Valve [2] | WW P1 4/27/2011 ug/l Valve [2] | WW P2 4/27/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 0.73 J | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | WW P3 4/27/2011 ug/l Valve [2] | XX P1 4/26/2011 ug/l Valve [2] | XX P2 4/26/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 1.2 J | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | WW P3 4/27/2011 ug/l Valve [2] | XX P1 4/26/2011 ug/l Valve [2] | XX P2 4/26/2011 ug/l Valve [2] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5.7 | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | XX P3 | YY P1 | YY P2 |
|---|---|---|---|---|---|
| | | Sample Date | 4/27/2011 | 4/26/2011 | 4/26/2011 |
| | | Unit | ug/l | ug/l | ug/l |
| | | Sample Method | Valve [2] | Valve [2] | Valve [2] |
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-5
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | XX P3 4/27/2011 ug/l Valve 2 | YY P1 4/26/2011 ug/l Valve 2 | YY P2 4/26/2011 ug/l Valve 2 |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 0.66 J | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 0.45 J |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 0.55 J |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | YY P3 | ZZ P1 | ZZ P2 |
|---|---|---|---|---|---|
| | | Sample Date | 4/26/2011 | 4/26/2011 | 4/26/2011 |
| | | Unit | ug/l | ug/l | ug/l |
| | | Sample Method | Valve[2] | Valve[2] | Valve[2] |
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | YY P3 4/26/2011 ug/l Valve[2] | ZZ P1 4/26/2011 ug/l Valve[2] | ZZ P2 4/26/2011 ug/l Valve[2] |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | **8.4 Y** | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
1 - Sampled from tap inline with pump.
2 - Valved tubing sampling system.
3- Sample collected from peristalatic pump, result reported from SVOC analysis.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | ZZ P3 4/26/2011 ug/l Valve[2] | ZZ P4 4/26/2011 ug/l Valve[2] |
|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-5**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | ZZ P3 4/26/2011 ug/l Valve[2] | ZZ P4 4/26/2011 ug/l Valve[2] |
|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected
[1] - Sampled from tap inline with pump.
[2] - Valved tubing sampling system.
[3]- Sample collected from peristalatic pump, result reported from SVOC analysis.

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 01-MW-01 5/18/2011 ug/l | 01-MW-02 5/18/2011 ug/l | 01-MW-03 5/18/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2.1 U | 2.1 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1.1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5.3 U | 5.2 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5.3 U | 5.2 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5.3 U | 5.2 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 2.5 J | 5.2 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5.3 U | 76.2 | 13.1 |
| 2,4-Dinitrophenol | 40 | | 21 U | 21 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2.1 U | 4.7 | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2.1 U | 2.1 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2.1 U | 2.1 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2.1 U | 2.1 U | 2 U |
| 2-Chlorophenol | 40 | | 5.3 U | 5.2 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1.1 U | 24.4 | 31.7 |
| 2-Methylphenol | 5 | | 2.1 U | **9.4 Y** | **12.8 Y** |
| 2-Nitroaniline | 100 | | 5.3 U | 5.2 U | 5 U |
| 2-Nitrophenol | 100 | | 5.3 U | 5.2 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2.1 U | **27.5 Y** | **26.4 Y** |
| 3,3'-Dichlorobenzidine | 30 | | 5.3 U | 5.2 U | 5 U |
| 3-Nitroaniline | 100 | | 5.3 U | 5.2 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 21 U | 21 U | 20 U |
| 4-Aminobiphenyl | NA | | 5.3 U | 5.2 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2.1 U | 2.1 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5.3 U | 5.2 U | 5 U |
| 4-Chloroaniline | 30 | | 5.3 U | 5.2 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2.1 U | 2.1 U | 2 U |
| 4-Nitroaniline | 100 | | 5.3 U | 5.2 U | 5 U |
| 4-Nitrophenol | 100 | | 11 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1.1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1.1 U | 1 U | 1 U |
| Acetophenone | 700 | | 0.57 J | **2780 Y** | **761 Y** |
| Aniline | 6 | | 2.6 | **33.3 Y** | 2 U |
| Anthracene | 2000 | | 1.1 U | 1 U | 1 U |
| Atrazine | 3 | | 5.3 U | 5.2 U | 5 U |
| Benzaldehyde | NA | | 5.3 U | 5.2 U | 5 U |
| Benzidine | 20 | | 21 U | 21 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.11 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.11 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 01-MW-01 5/18/2011 ug/l | 01-MW-02 5/18/2011 ug/l | 01-MW-03 5/18/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.11 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1.1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.11 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 21 U | 2090 | 806 |
| Benzyl Alcohol | 2000 | | 2.1 U | 2.1 U | 4 |
| Biphenyl | 400 | | 1.1 U | 0.95 J | 4.1 |
| bis(2-Chloroethoxy)Methane | 100 | | 2.1 U | 2.1 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2.1 U | 2.1 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2.1 U | 2.1 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2.1 U | 1.6 J | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2.1 U | 2.1 U | 2 U |
| Caprolactam | NA | | 17.7 | 2.1 U | 2 U |
| Carbazole | 100 | | 1.1 U | 1 U | 1 U |
| Catechol | NA | | 11 U | 10 U | 10 U |
| Chlorophenols | NA | | 5.3 U | 5.2 U | 5 U |
| Chrysene | 5 | | 1.1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.11 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5.3 U | 5.2 U | 1.1 J |
| Diethyl Phthalate | 6000 | | 2.1 U | 2.1 U | 2 U |
| Dimethyl Phthalate | 100 | | 2.1 U | 2.6 | 2 U |
| di-n-Butyl Phthalate | 700 | | 2.1 U | 2.1 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2.1 U | 2.1 U | 2 U |
| Diphenylamine | 200 | | 5.3 U | 5.2 U | 5 U |
| Fluoranthene | 300 | | 1.1 U | 1 U | 1 U |
| Fluorene | 300 | | 1.1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.021 U | 0.021 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1.1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 21 U | 21 U | 20 U |
| Hexachloroethane | 7 | | 2.1 U | 2.1 U | 2 U |
| Hydroquinone | NA | | 11 U | 10 U | 57.5 |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.11 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2.1 U | 2.1 U | 2 U |
| Methanamine, N-Methyl-N-Nitrosos | 0.8 | | 2.1 U | 2.1 U | 2 U |
| Naphthalene | 300 | | 17.2 | **2070 Y** | **5010 Y** |
| Nitrobenzene | 6 | | 2.1 U | **431 Y** | **7770 Y** |
| n-Nitrosodiethylamine | NA | | 5.3 U | 5.2 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5.3 U | 5.2 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2.1 U | 2.1 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 01-MW-01 5/18/2011 ug/l | 01-MW-02 5/18/2011 ug/l | 01-MW-03 5/18/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5.3 U | 5.2 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5.3 U | 5.2 U | 5 U |
| n-Nitrosomorpholine | NA | | 5.3 U | 5.2 U | 5 U |
| n-Nitrosopiperidine | NA | | 5.3 U | 5.2 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5.3 U | 5.2 U | 5 U |
| o-Chloroaniline | NA | | 5.3 U | 5.2 U | 5 U |
| o-Toluidine | NA | | 5.3 U | 5.2 U | 5 U |
| Pentachlorobenzene | NA | | 5.3 U | 5.2 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.32 U | 0.31 U | 0.3 U |
| Phenanthrene | 100 | | 1.1 U | 1 U | 1 U |
| Phenol | 2000 | | 2.7 | 64.9 | 84.4 |
| Pyrene | 200 | | 1.1 U | 1 U | 1 U |
| Pyridine | NA | | 2.1 U | 41.2 | 128 |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 19R 4/28/2011 ug/l | 28R 4/28/2011 ug/l | 34R 4/28/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | --- | --- | --- |
| 1,2-Diphenylhydrazine | 20 | | --- | --- | --- |
| 1,4-Naphthoquinone | NA | | --- | --- | --- |
| 2,4,5-Trichlorophenol | 700 | | 25 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 25 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 25 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | **166 Y** | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 100 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 10 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 10 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 7.7 J | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | --- | --- | --- |
| 2-Chlorophenol | 40 | | 25 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 75.7 | 1 U | 1 U |
| 2-Methylphenol | 5 | | **46.9 Y** | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 25 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 25 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | **194 Y** | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 25 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 25 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 100 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | --- | --- | --- |
| 4-Bromophenyl Phenyl Ether | 100 | | 10 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 25 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 25 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 10 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 25 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 50 U | 10 U | 10 U |
| Acenaphthene | 400 | | --- | 0.187 | 16.6 |
| Acenaphthylene | 100 | | 0.1 U | 0.1 U | 0.1 U |
| Acetophenone | 700 | | --- | --- | --- |
| Aniline | 6 | | **74 Y** | **10.3 Y** | **10.5 Y** |
| Anthracene | 2000 | | 0.723 | 0.1 U | 5.6 |
| Atrazine | 3 | | --- | --- | --- |
| Benzaldehyde | NA | | --- | --- | --- |
| Benzidine | 20 | | --- | --- | --- |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 19R 4/28/2011 ug/l | 28R 4/28/2011 ug/l | 34R 4/28/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | --- | --- | --- |
| Benzyl Alcohol | 2000 | | --- | --- | --- |
| Biphenyl | 400 | | --- | --- | --- |
| bis(2-Chloroethoxy)Methane | 100 | | 10 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 10 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 10 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | **418 Y** | 2 U | **3.8 Y** |
| Butyl Benzyl Phthalate | 100 | | 10 U | 2 U | 2 U |
| Caprolactam | NA | | --- | --- | --- |
| Carbazole | 100 | | 43.5 | 1 U | 1 U |
| Catechol | NA | | --- | --- | --- |
| Chlorophenols | NA | | --- | --- | --- |
| Chrysene | 5 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 16.6 J | 5 U | 11.1 |
| Diethyl Phthalate | 6000 | | 10 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 10 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 10 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 10 U | 2 U | 2 U |
| Diphenylamine | 200 | | --- | --- | --- |
| Fluoranthene | 300 | | 0.0963 J | 0.1 U | 0.1 U |
| Fluorene | 300 | | 4.62 | 0.1 U | 1.88 |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 5 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 100 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 10 U | 2 U | 2 U |
| Hydroquinone | NA | | --- | --- | --- |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 10 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitrosc | 0.8 | | --- | --- | --- |
| Naphthalene | 300 | | **4650 Y** | 2.95 | 1.14 |
| Nitrobenzene | 6 | | 10 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | --- | --- | --- |
| n-Nitrosodi-n-Butylamine | NA | | --- | --- | --- |
| n-Nitroso-di-n-Propylamine | 10 | | 10 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 19R 4/28/2011 ug/l | 28R 4/28/2011 ug/l | 34R 4/28/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | **602 Y** | 1.4 J | **71 Y** |
| n-Nitrosomethylethylamine | NA | | --- | --- | --- |
| n-Nitrosomorpholine | NA | | --- | --- | --- |
| n-Nitrosopiperidine | NA | | --- | --- | --- |
| n-Nitrosopyrrolidine | NA | | --- | --- | --- |
| o-Chloroaniline | NA | | --- | --- | --- |
| o-Toluidine | NA | | --- | --- | --- |
| Pentachlorobenzene | NA | | --- | --- | --- |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1.92 | 0.1 U | 0.79 J |
| Phenol | 2000 | | 54.5 | 2 U | 2 U |
| Pyrene | 200 | | 0.108 | 0.1 U | 0.1 U |
| Pyridine | NA | | --- | --- | --- |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 38R 4/29/2011 ug/l | 42R 4/30/2011 ug/l | AAA 4/29/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2.2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1.1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5.4 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5.4 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5.4 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5.4 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 3 J | 2.6 J | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 22 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2.2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2.2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 20.2 | 2.2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2.2 U | 2 U |
| 2-Chlorophenol | 40 | | 1.4 J | 1.4 J | 5 U |
| 2-Methylnaphthalene | 100 | | 25.2 | 1.1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2.2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5.4 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5.4 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2.2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5.4 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5.4 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 22 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5.4 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2.2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5.4 U | 5 U |
| 4-Chloroaniline | 30 | | 5.3 | 8.3 | 0.87 J |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2.2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5.4 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 11 U | 10 U |
| Acenaphthene | 400 | | 15.5 | 28.1 | 1 U |
| Acenaphthylene | 100 | | 1 U | 1.1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2.2 U | 2 U |
| Aniline | 6 | | **176 Y** | **56.9 Y** | **7.3 Y** |
| Anthracene | 2000 | | 1 U | 0.93 J | 1 U |
| Atrazine | 3 | | 5 U | 5.4 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5.4 U | 5 U |
| Benzidine | 20 | | 20 U | 22 U | 8.3 J |
| Benzo(a)Anthracene | 0.1 | | 1 U | --- | 1 U |
| Benzo(a)Pyrene | 0.1 | | 1 U | --- | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 38R 4/29/2011 ug/l | 42R 4/30/2011 ug/l | AAA 4/29/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 1 U | --- | 1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1.1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 1 U | --- | 1 U |
| Benzoic Acide | 30000 | | 20 U | 22 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2.2 U | 2 U |
| Biphenyl | 400 | | 12.4 | 10.3 | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2.2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2.2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2.2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2.2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2.2 U | 2 U |
| Caprolactam | NA | | 2 U | 2.2 U | 2 U |
| Carbazole | 100 | | 1 U | 1.1 U | 1 U |
| Catechol | NA | | 10 U | 11 U | 10 U |
| Chlorophenols | NA | | 5 U | 5.4 U | 5 U |
| Chrysene | 5 | | 1 U | 1.1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 1 U | --- | 1 U |
| Dibenzofuran | 100 | | 11.6 | 13 | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2.2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2.2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2.2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2.2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5.4 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1.1 U | 1 U |
| Fluorene | 300 | | 6.3 | 1.1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 1 U | --- | 1 U |
| Hexachlorobutadiene | 1 | | 1 U | 1.1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 22 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2.2 U | 2 U |
| Hydroquinone | NA | | 10 U | 11 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 1 U | --- | 1 U |
| Isophorone | 40 | | 2 U | 2.2 U | 2 U |
| Methanamine, N-Methyl-N-Nitrosc | 0.8 | | 2 U | 2.2 U | 2 U |
| Naphthalene | 300 | | **934 Y** | 9.4 | 0.56 N |
| Nitrobenzene | 6 | | 2 U | 2.2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5.4 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5.4 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2.2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 38R 4/29/2011 ug/l | 42R 4/30/2011 ug/l | AAA 4/29/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | **107 Y** | **58.6 Y** | 5.1 |
| n-Nitrosomethylethylamine | NA | | 5 U | 5.4 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5.4 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5.4 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5.4 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5.4 U | 5 U |
| o-Toluidine | NA | | 36.1 | 4.5 J | 0.84 J |
| Pentachlorobenzene | NA | | 5 U | 5.4 U | 5 U |
| Pentachlorophenol | 0.3 | | 10 U | --- | 10 U |
| Phenanthrene | 100 | | 1.6 | 2.2 | 1 U |
| Phenol | 2000 | | 2 U | 2.2 U | 2 U |
| Pyrene | 200 | | 1 U | 1.1 U | 1 U |
| Pyridine | NA | | 2 U | 2.2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | CCC-R 4/30/2011 ug/l | CCC-R DUP 4/30/2011 ug/l | EEE-R 4/30/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | 2 U |
| Aniline | 6 | | 2 U | 2 U | 2 U |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | CCC-R 4/30/2011 ug/l | CCC-R DUP 4/30/2011 ug/l | EEE-R 4/30/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1 U | 1 U |
| Nitrobenzene | 6 | | 2 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | CCC-R 4/30/2011 ug/l | CCC-R DUP 4/30/2011 ug/l | EEE-R 4/30/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 2 U | 2 U | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | FLOD-W1S 5/18/2011 ug/l | FLOD-W2BS 5/19/2011 ug/l | FLOD-W2S 5/19/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5.2 | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 7.6 | 1 U | 1 U |
| 2-Methylphenol | 5 | | 3.6 | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | **9.9 Y** | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | **1100 Y** | 2 U | 2 U |
| Aniline | 6 | | **328 Y** | 2 R | 2 R |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 R | 20 R |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | FLOD-W1S 5/18/2011 ug/l | FLOD-W2BS 5/19/2011 ug/l | FLOD-W2S 5/19/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 386 J | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2.6 | 2 U | 2 U |
| Biphenyl | 400 | | 0.79 J | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | **575 Y** | 1 U | 78.4 |
| Nitrobenzene | 6 | | **64.6 Y** | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | FLOD-W1S 5/18/2011 ug/l | FLOD-W2BS 5/19/2011 ug/l | FLOD-W2S 5/19/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 41.9 | 2 U | 4.6 |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 145 | 2 R | 2 R |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | III 4/29/2011 ug/l | KKK 4/29/2011 ug/l | MW-1A 4/30/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 10 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 5 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 25 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 25 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 25 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 25 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 53.1 |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 100 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 10 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 10 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 10 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 10 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 25 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 39.6 |
| 2-Methylphenol | 5 | | 2 U | 2 U | **59.3 Y** |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 25 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 25 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 10 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 25 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | **606 Y** |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 100 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 25 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 10 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 25 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | **41 Y** |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 10 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 25 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 50 U |
| Acenaphthene | 400 | | 1 U | 1 U | 2.4 J |
| Acenaphthylene | 100 | | 1 U | 1 U | 5 U |
| Acetophenone | 700 | | 2 U | 2 U | 10 U |
| Aniline | 6 | | 2 U | 2 U | **131000 Y** |
| Anthracene | 2000 | | 1 U | 1 U | 5 U |
| Atrazine | 3 | | 5 U | 5 U | 25 U |
| Benzaldehyde | NA | | 5 U | 5 U | 25 U |
| Benzidine | 20 | | 20 U | 20 U | 100 U |
| Benzo(a)Anthracene | 0.1 | | 1 U | **0.65 J Y** | 5 U |
| Benzo(a)Pyrene | 0.1 | | 1 U | 1 U | 5 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | III 4/29/2011 ug/l | KKK 4/29/2011 ug/l | MW-1A 4/30/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 1 U | **1.5 Y** | 5 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 5 U |
| Benzo(k)Fluoranthene | 0.5 | | 1 U | **0.59 J Y** | 5 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 100 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 10 U |
| Biphenyl | 400 | | 1 U | 1 U | 5 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 10 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 10 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 10 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2.2 | 10 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 10 U |
| Caprolactam | NA | | 2 U | 2 U | 10 U |
| Carbazole | 100 | | 1 U | 1 U | 5 U |
| Catechol | NA | | 10 U | 10 U | 50 U |
| Chlorophenols | NA | | 5 U | 5 U | 25 U |
| Chrysene | 5 | | 1 U | 0.54 J | 5 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 1 U | 1 U | 5 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 25 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 10 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 10 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 10 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 10 U |
| Diphenylamine | 200 | | 5 U | 5 U | 25 U |
| Fluoranthene | 300 | | 1 U | 0.45 J | 5 U |
| Fluorene | 300 | | 1 U | 1 U | 5 U |
| Hexachlorobenzene | 0.02 | | 1 U | 1 U | 5 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 5 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 100 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 10 U |
| Hydroquinone | NA | | 10 U | 10 U | 50 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 1 U | 1 U | 5 U |
| Isophorone | 40 | | 2 U | 2 U | 10 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 10 U |
| Naphthalene | 300 | | 1 U | 0.88 N | **5450 Y** |
| Nitrobenzene | 6 | | 2 U | 2 U | **4730 Y** |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 25 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 25 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 10 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | III 4/29/2011 ug/l | KKK 4/29/2011 ug/l | MW-1A 4/30/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | **537 Y** |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 25 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 25 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 25 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 25 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 82.9 |
| o-Toluidine | NA | | 5 U | 5 U | 8380 |
| Pentachlorobenzene | NA | | 5 U | 5 U | 25 U |
| Pentachlorophenol | 0.3 | | 10 U | 10 U | 50 U |
| Phenanthrene | 100 | | 1 U | 1 U | 5 U |
| Phenol | 2000 | | 2 U | 2 U | 10 U |
| Pyrene | 200 | | 1 U | 1 U | 5 U |
| Pyridine | NA | | 2 U | 2 U | 10 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-6
## Groundwater Analytical Results
## 8270 Semi Volatile Organic Compound Data
## 2011 First Half Site Wide Wells
## Wyeth Holdings Corporation
## Former American Cyanamid Site
## Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | MW-2 4/28/2011 ug/l | MW-22R 4/30/2011 ug/l | PW-2 4/14/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | --- | 2 U | --- |
| 1,2-Diphenylhydrazine | 20 | | --- | 1 U | --- |
| 1,4-Naphthoquinone | NA | | --- | 5 U | --- |
| 2,4,5-Trichlorophenol | 700 | | 25 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 9.1 J | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 25 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 90.5 | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 100 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 10 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 10 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 10 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | --- | 2 U | --- |
| 2-Chlorophenol | 40 | | 25 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | **352 Y** | 1 U | 10.8 |
| 2-Methylphenol | 5 | | **33.7 Y** | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 25 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 25 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | **58.9 Y** | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 25 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 25 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 100 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | --- | 5 U | --- |
| 4-Bromophenyl Phenyl Ether | 100 | | 10 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 25 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | **151 Y** | 5 U | 3.3 J |
| 4-Chlorophenyl Phenyl Ether | 100 | | 10 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 25 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 50 U | 10 U | 10 U |
| Acenaphthene | 400 | | 57.9 | 1 U | 8.5 |
| Acenaphthylene | 100 | | 0.5 U | 1 U | 0.384 |
| Acetophenone | 700 | | --- | 2 U | --- |
| Aniline | 6 | | **17100 Y** | **117 Y** | **304 Y** |
| Anthracene | 2000 | | 3.01 | 1 U | 0.306 |
| Atrazine | 3 | | --- | 5 U | --- |
| Benzaldehyde | NA | | --- | 5 U | --- |
| Benzidine | 20 | | --- | 20 U | --- |
| Benzo(a)Anthracene | 0.1 | | 0.5 U | 1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.5 U | 1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | MW-2 4/28/2011 ug/l | MW-22R 4/30/2011 ug/l | PW-2 4/14/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.5 U | 1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 0.5 U | 1 U | 0.1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.5 U | 1 U | 0.1 U |
| Benzoic Acide | 30000 | | --- | 20 U | --- |
| Benzyl Alcohol | 2000 | | --- | 2 U | --- |
| Biphenyl | 400 | | --- | 1 U | --- |
| bis(2-Chloroethoxy)Methane | 100 | | 10 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 10 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 10 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | **7.7 J Y** | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 10 U | 2 U | 2 U |
| Caprolactam | NA | | --- | 2 U | --- |
| Carbazole | 100 | | 7.1 | 1 U | 0.76 J |
| Catechol | NA | | --- | 10 U | --- |
| Chlorophenols | NA | | --- | 5 U | --- |
| Chrysene | 5 | | 0.5 U | 1 U | 0.1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.5 U | 1 U | 0.1 U |
| Dibenzofuran | 100 | | 34.9 | 5 U | 2.5 J |
| Diethyl Phthalate | 6000 | | 10 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 10 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 10 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 10 U | 2 U | 2 U |
| Diphenylamine | 200 | | --- | 5 U | --- |
| Fluoranthene | 300 | | 0.559 | 1 U | 0.1 U |
| Fluorene | 300 | | 22.4 | 1 U | 1.8 |
| Hexachlorobenzene | 0.02 | | 0.1 U | 1 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 5 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 100 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 10 U | 2 U | 2 U |
| Hydroquinone | NA | | --- | 10 U | --- |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.5 U | 1 U | 0.1 U |
| Isophorone | 40 | | 10 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | --- | 2 U | --- |
| Naphthalene | 300 | | **5410 Y** | 0.47 J | 69.8 |
| Nitrobenzene | 6 | | 10 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | --- | 5 U | --- |
| n-Nitrosodi-n-Butylamine | NA | | --- | 5 U | --- |
| n-Nitroso-di-n-Propylamine | 10 | | 10 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | MW-2 4/28/2011 ug/l | MW-22R 4/30/2011 ug/l | PW-2 4/14/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | **187 Y** | 5.3 | 7.4 |
| n-Nitrosomethylethylamine | NA | | --- | 5 U | --- |
| n-Nitrosomorpholine | NA | | --- | 5 U | --- |
| n-Nitrosopiperidine | NA | | --- | 5 U | --- |
| n-Nitrosopyrrolidine | NA | | --- | 5 U | --- |
| o-Chloroaniline | NA | | --- | 2.2 J | --- |
| o-Toluidine | NA | | --- | 5.6 | --- |
| Pentachlorobenzene | NA | | --- | 5 U | --- |
| Pentachlorophenol | 0.3 | | **4.51 Y** | 10 U | 0.3 U |
| Phenanthrene | 100 | | 5.45 | 1 U | 0.461 |
| Phenol | 2000 | | 10 U | 2 U | 2 U |
| Pyrene | 200 | | 0.693 | 1 U | 0.1 U |
| Pyridine | NA | | --- | 2 U | --- |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
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O'BRIEN & GERE ENGINEERS, INC.

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PW-3 4/26/2011 ug/l | PZ-12-1 5/18/2011 ug/l | PZ-12-2 5/18/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 0.96 J | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 14.4 | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 8 | 1 U | 1 U |
| Acenaphthylene | 100 | | 0.52 J | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | 2 U |
| Aniline | 6 | | **510 Y** | 2 U | 2 U |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PW-3 4/26/2011 ug/l | PZ-12-1 5/18/2011 ug/l | PZ-12-2 5/18/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1.8 | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 0.79 J | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 2.3 J | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 2.1 | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 92.2 | 1 U | 1.4 |
| Nitrobenzene | 6 | | 2 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PW-3 4/26/2011 ug/l | PZ-12-1 5/18/2011 ug/l | PZ-12-2 5/18/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 7.2 | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 2.8 N | 5 U | 5 U |
| o-Toluidine | NA | | 1.5 N | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 0.82 J | 1 U | 1 U |
| Phenol | 2000 | | 2 U | 2 U | 2 U |
| Pyrene | 200 | | 0.1 U | 1 U | 1 U |
| Pyridine | NA | | 2 R | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

# Table 3-6
## Groundwater Analytical Results
## 8270 Semi Volatile Organic Compound Data
## 2011 First Half Site Wide Wells
## Wyeth Holdings Corporation
## Former American Cyanamid Site
## Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-3 5/18/2011 ug/l | PZ-12-3 DUP 5/18/2011 ug/l | PZ-12-4 5/18/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 35.4 |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 15.5 |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 93.1 |
| 2-Methylphenol | 5 | | 2 U | 2 U | **23.8 Y** |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | **55.6 Y** |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | **919 Y** |
| Aniline | 6 | | 2 U | 2 U | **471 Y** |
| Anthracene | 2000 | | 1 U | 1 U | 4.5 |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-3 5/18/2011 ug/l | PZ-12-3 DUP 5/18/2011 ug/l | PZ-12-4 5/18/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 490 |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 7.8 |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5.3 |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 4.1 |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1.2 | **4450 Y** |
| Nitrobenzene | 6 | | 2 U | 2 U | **5130 Y** |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-3 5/18/2011 ug/l | PZ-12-3 DUP 5/18/2011 ug/l | PZ-12-4 5/18/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 6.9 |
| Phenol | 2000 | | 2 U | 2 U | 162 |
| Pyrene | 200 | | 1 U | 1 U | 0.89 J |
| Pyridine | NA | | 2 U | 2 U | 317 |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-5 5/18/2011 ug/l | PZ-12-6 5/18/2011 ug/l | TFP-94-1R 4/27/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | --- |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | --- |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | --- |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 1.9 J | 48.7 |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | --- |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 3.2 | 2.7 |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | **10.6 Y** | **7.4 Y** | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | --- |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | **5 U** | 5 U | 25.6 |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 7.6 |
| Acenaphthylene | 100 | | 1 U | 1 U | 1.78 |
| Acetophenone | 700 | | 1.8 J | 29.5 | **---** |
| Aniline | 6 | | 2 U | **20 Y** | **5300 Y** |
| Anthracene | 2000 | | 1 U | 1 U | 0.208 |
| Atrazine | 3 | | 5 U | 5 U | --- |
| Benzaldehyde | NA | | 5 U | 5 U | --- |
| Benzidine | 20 | | 20 U | 20 U | --- |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 3-6
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-5 5/18/2011 ug/l | PZ-12-6 5/18/2011 ug/l | TFP-94-1R 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 0.1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 131 | 8.5 J | --- |
| Benzyl Alcohol | 2000 | | 5.2 | 3.7 | --- |
| Biphenyl | 400 | | 1 U | 1 U | --- |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 1.2 J | 2 U | 2.1 N |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | --- |
| Carbazole | 100 | | 1 U | 1 U | 1.3 |
| Catechol | NA | | 10 U | 10 U | --- |
| Chlorophenols | NA | | 5 U | 5 U | --- |
| Chrysene | 5 | | 1 U | 1 U | 0.1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 3.5 J |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | --- |
| Fluoranthene | 300 | | 1 U | 1 U | 0.1 U |
| Fluorene | 300 | | 1 U | 1 U | 1.54 |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | --- |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 0.77 J | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | --- |
| Naphthalene | 300 | | 1.2 | 66.2 | **644 Y** |
| Nitrobenzene | 6 | | 2 U | **236 Y** | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | --- |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | --- |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-6**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-5 5/18/2011 ug/l | PZ-12-6 5/18/2011 ug/l | TFP-94-1R 4/27/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | **45.8 Y** |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | --- |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | --- |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | --- |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | --- |
| o-Chloroaniline | NA | | 5 U | 5 U | --- |
| o-Toluidine | NA | | 5 U | 5 U | --- |
| Pentachlorobenzene | NA | | 5 U | 5 U | --- |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 0.238 |
| Phenol | 2000 | | 4.9 | 10.8 | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 0.1 U |
| Pyridine | NA | | 2 U | 10.1 | --- |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 01-MW-01 5/18/2011 ug/l | 01-MW-02 5/18/2011 ug/l | 01-MW-03 5/18/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | **15100 Y** | **320000 Y** | **85800 Y** |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | **3.8 Y** | **59.6 Y** | **29 Y** |
| Barium | 6000 | | 200 U | 200 U | 200 U |
| Beryllium | 1 | | **4.8 Y** | **17.4 Y** | **4.2 Y** |
| Cadmium | 4 | | 3 U | **12.2 Y** | **4.4 Y** |
| Calcium | NA | | 51200 | 327000 | 33000 |
| Chromium | 70 | | 10 U | **220 Y** | **161 Y** |
| Cobalt | NA | | 50 U | 194 | 50 U |
| Copper | 1300 | | 88.5 | 142 | 71 |
| Iron | 300 | | **12600 Y** | **433000 Y** | **195000 Y** |
| Lead | 5 | | 3 U | **38.9 Y** | **6.2 Y** |
| Magnesium | NA | | 15400 | 131000 | 23900 |
| Manganese | 50 | | **3450 Y** | **11800 Y** | **2230 Y** |
| Mercury | 2 | | 0.2 U | **4.8 Y** | 0.45 |
| Nickel | 100 | | **197 Y** | **712 Y** | **137 Y** |
| Potassium | NA | | 19600 | 156000 | 20800 |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 49800 | **363000 Y** | 36300 |
| Thallium | 2 | | 2 U | 4 U | 2 U |
| Vanadium | NA | | 50 U | 369 | 167 |
| Zinc | 2000 | | 231 | 878 | 243 |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

Table 3-7
Groundwater Analytical Results
Metals Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 16-MW-2 4/29/2011 ug/l | 28R 4/28/2011 ug/l | 34R 4/28/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | --- | --- |
| Antimony | 6 | | 6 U | --- | --- |
| Arsenic | 3 | | **21.6 Y** | **31.2 Y** | **17.1 Y** |
| Barium | 6000 | | 200 U | --- | --- |
| Beryllium | 1 | | 1 U | --- | --- |
| Cadmium | 4 | | 3 U | 3 U | --- |
| Calcium | NA | | 31100 | --- | --- |
| Chromium | 70 | | 10 U | --- | --- |
| Cobalt | NA | | 50 U | --- | --- |
| Copper | 1300 | | 10 U | --- | --- |
| Iron | 300 | | **55700 Y** | --- | --- |
| Lead | 5 | | 3 U | --- | --- |
| Magnesium | NA | | 38100 | --- | --- |
| Manganese | 50 | | **11000 Y** | --- | --- |
| Mercury | 2 | | 0.2 U | --- | --- |
| Nickel | 100 | | 10 U | --- | --- |
| Potassium | NA | | 10000 U | --- | --- |
| Selenium | 40 | | 20 U | --- | --- |
| Silver | 40 | | 10 U | --- | --- |
| Sodium | 50000 | | 26100 | --- | --- |
| Thallium | 2 | | 4 U | --- | --- |
| Vanadium | NA | | 50 U | --- | --- |
| Zinc | 2000 | | 20 U | --- | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 38R 4/29/2011 ug/l | 42R 4/30/2011 ug/l | AAA 4/29/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | --- | --- | **366 Y** |
| Antimony | 6 | | --- | --- | 6 U |
| Arsenic | 3 | | **3.1 Y** | **18.2 Y** | **17.5 Y** |
| Barium | 6000 | | --- | --- | 200 U |
| Beryllium | 1 | | --- | --- | 1 U |
| Cadmium | 4 | | 3 U | --- | 3 U |
| Calcium | NA | | --- | --- | 32200 |
| Chromium | 70 | | 10 U | --- | 10 U |
| Cobalt | NA | | --- | --- | 50 U |
| Copper | 1300 | | --- | --- | 10 U |
| Iron | 300 | | **---** | **---** | **58000 Y** |
| Lead | 5 | | --- | --- | 3 |
| Magnesium | NA | | --- | --- | 54000 |
| Manganese | 50 | | **---** | **---** | **15100 Y** |
| Mercury | 2 | | --- | --- | 0.2 U |
| Nickel | 100 | | --- | --- | 24.9 |
| Potassium | NA | | --- | --- | 10000 U |
| Selenium | 40 | | --- | --- | 20 U |
| Silver | 40 | | --- | --- | 10 U |
| Sodium | 50000 | | --- | --- | 20000 |
| Thallium | 2 | | --- | --- | 4 U |
| Vanadium | NA | | --- | --- | 50 U |
| Zinc | 2000 | | --- | --- | 20 U |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
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Table 3-7
Groundwater Analytical Results
Metals Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | CCC-R 4/30/2011 ug/l | CCC-R DUP 4/30/2011 ug/l | EEE-R 4/30/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | 200 U |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | **11.2 Y** | **10.6 Y** | **16.1 Y** |
| Barium | 6000 | | 200 U | 200 U | 200 U |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 54500 | 56100 | 35600 |
| Chromium | 70 | | 10 U | 10 U | 10 U |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | **575 Y** | **595 Y** | 100 U |
| Lead | 5 | | 3 U | 3 U | 3 U |
| Magnesium | NA | | 57800 | 57900 | 58200 |
| Manganese | 50 | | **3460 Y** | **3690 Y** | **1750 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 10 U |
| Potassium | NA | | 10000 U | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 25300 | 26600 | 10000 U |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | FLOD-W1S 5/18/2011 ug/l | FLOD-W2BS 5/19/2011 ug/l | FLOD-W2S 5/19/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | **170000 Y** | **294 Y** | **9060 Y** |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | **20 Y** | 3 U | **3.8 Y** |
| Barium | 6000 | | 200 U | 200 U | 200 U |
| Beryllium | 1 | | **16.8 Y** | 1 U | **4.2 Y** |
| Cadmium | 4 | | **7.5 Y** | 3 U | 3 U |
| Calcium | NA | | 183000 | 612000 | 89200 |
| Chromium | 70 | | 54 | 10 U | 10 U |
| Cobalt | NA | | 175 | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | **249000 Y** | **733 Y** | **54400 Y** |
| Lead | 5 | | **12.3 Y** | 3 U | 3 U |
| Magnesium | NA | | 94100 | 289000 | 26400 |
| Manganese | 50 | | **12300 Y** | **9760 Y** | **4440 Y** |
| Mercury | 2 | | 0.92 | 0.2 U | 0.2 U |
| Nickel | 100 | | **535** | 12.2 | 94.1 |
| Potassium | NA | | 66600 | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | **190000 Y** | **404000 Y** | **57400 Y** |
| Thallium | 2 | | 4 U | 2 U | 2 U |
| Vanadium | NA | | 145 | 50 U | 50 U |
| Zinc | 2000 | | 722 | 21.5 | 216 |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
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**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | III 4/29/2011 ug/l | KKK 4/29/2011 ug/l | MW-1A 4/30/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | 200 U |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | **7.3 Y** | 3 U | **5.7 Y** |
| Barium | 6000 | | 200 U | 200 U | 200 U |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 32500 | 11800 | 388000 |
| Chromium | 70 | | 10 U | 10 U | 10 |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 19.8 |
| Iron | 300 | | **20100 Y** | **660 Y** | **42300 Y** |
| Lead | 5 | | 3 U | 3 U | **5.1 Y** |
| Magnesium | NA | | 13200 | 7040 | 25700 |
| Manganese | 50 | | **7490 Y** | **2540 Y** | **2610 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 18.8 |
| Potassium | NA | | 10000 U | 10000 U | 14400 |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | **63200 Y** | 15500 | **120000 Y** |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 44.1 |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | MW-2 4/28/2011 ug/l | MW-22R 4/30/2011 ug/l | PW-2 4/14/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | --- | **889 Y** | --- |
| Antimony | 6 | | --- | 6 U | --- |
| Arsenic | 3 | | **14.8 Y** | **465 Y** | **3.6 Y** |
| Barium | 6000 | | --- | 249 | --- |
| Beryllium | 1 | | --- | 1 U | --- |
| Cadmium | 4 | | 3 U | 3 U | --- |
| Calcium | NA | | --- | 26000 | --- |
| Chromium | 70 | | --- | 10 U | --- |
| Cobalt | NA | | --- | 50 U | --- |
| Copper | 1300 | | --- | 10 U | --- |
| Iron | 300 | | --- | **62400 Y** | --- |
| Lead | 5 | | --- | 3 U | --- |
| Magnesium | NA | | --- | 8810 | --- |
| Manganese | 50 | | --- | **2250 Y** | --- |
| Mercury | 2 | | --- | 0.2 U | --- |
| Nickel | 100 | | --- | 10 U | --- |
| Potassium | NA | | --- | 10000 U | --- |
| Selenium | 40 | | --- | 10 U | --- |
| Silver | 40 | | --- | 10 U | --- |
| Sodium | 50000 | | --- | 23500 | --- |
| Thallium | 2 | | --- | 2 U | --- |
| Vanadium | NA | | --- | 50 U | --- |
| Zinc | 2000 | | --- | 20 U | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PW-3 4/26/2011 ug/l | PZ-12-1 5/18/2011 ug/l | PZ-12-2 5/18/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | --- | **1870 Y** | **841 Y** |
| Antimony | 6 | | --- | 6 U | 6 U |
| Arsenic | 3 | | **4 Y** | 3 U | 3 U |
| Barium | 6000 | | --- | 200 U | 200 U |
| Beryllium | 1 | | --- | 1 U | 1 U |
| Cadmium | 4 | | --- | 3 U | 3 U |
| Calcium | NA | | --- | 11900 | 18800 |
| Chromium | 70 | | --- | 10 U | 10 U |
| Cobalt | NA | | --- | 50 U | 50 U |
| Copper | 1300 | | --- | 250 | 90.8 |
| Iron | 300 | | --- | **652 Y** | **1760 Y** |
| Lead | 5 | | --- | 3 U | 3 U |
| Magnesium | NA | | --- | 5000 U | 5000 U |
| Manganese | 50 | | --- | **1460 Y** | **1390 Y** |
| Mercury | 2 | | --- | 0.2 U | 0.2 U |
| Nickel | 100 | | --- | **102 Y** | 35.1 |
| Potassium | NA | | --- | 10000 U | 10000 U |
| Selenium | 40 | | --- | 10 U | 10 U |
| Silver | 40 | | --- | 10 U | 10 U |
| Sodium | 50000 | | --- | 10400 | 10000 |
| Thallium | 2 | | --- | 2 U | 2 U |
| Vanadium | NA | | --- | 50 U | 50 U |
| Zinc | 2000 | | --- | 194 | 48.9 |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-3 5/18/2011 ug/l | PZ-12-3 DUP 5/18/2011 ug/l | PZ-12-4 5/18/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | **52800 Y** |
| Antimony | 6 | | 6 U | 6 U | 12 U |
| Arsenic | 3 | | 3 U | 3 U | **20.6 Y** |
| Barium | 6000 | | 200 U | 200 U | 200 U |
| Beryllium | 1 | | 1 U | 1 U | **3.5 Y** |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 25900 | 26300 | 30000 |
| Chromium | 70 | | 10 U | 10 U | **78.4 Y** |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 22.1 | 22.2 | 58.4 |
| Iron | 300 | | **676 Y** | **661 Y** | **137000 Y** |
| Lead | 5 | | 3 U | 3 U | **22.5 Y** |
| Magnesium | NA | | 5410 | 5390 | 24100 |
| Manganese | 50 | | **333 Y** | **333 Y** | **1590 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.85 |
| Nickel | 100 | | 10 U | 10 U | **128 Y** |
| Potassium | NA | | 10000 U | 10000 U | 15200 |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 11200 | 11200 | 33200 |
| Thallium | 2 | | 2 U | 2 U | 4 U |
| Vanadium | NA | | 50 U | 50 U | 104 |
| Zinc | 2000 | | 20 U | 20 U | 253 |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | PZ-12-5 5/18/2011 ug/l | PZ-12-6 5/18/2011 ug/l | SS P1 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | **1060 Y** | **1920 Y** | --- |
| Antimony | 6 | | 6 U | 6 U | --- |
| Arsenic | 3 | | **3.6 Y** | **6.7 Y** | **5.9 Y** |
| Barium | 6000 | | 200 U | 200 U | --- |
| Beryllium | 1 | | 1 U | 1 U | --- |
| Cadmium | 4 | | 3 U | 3 U | --- |
| Calcium | NA | | 32400 | 7600 | --- |
| Chromium | 70 | | 10 U | 10 U | --- |
| Cobalt | NA | | 50 U | 50 U | --- |
| Copper | 1300 | | 128 | 10 U | --- |
| Iron | 300 | | **10200 Y** | **33800 Y** | --- |
| Lead | 5 | | 3 U | 3 U | --- |
| Magnesium | NA | | 6920 | 5000 U | --- |
| Manganese | 50 | | **7060 Y** | **636 Y** | --- |
| Mercury | 2 | | 0.76 | 0.2 U | --- |
| Nickel | 100 | | 86.2 | 20.4 | --- |
| Potassium | NA | | 10000 U | 10000 U | --- |
| Selenium | 40 | | 10 U | 10 U | --- |
| Silver | 40 | | 10 U | 10 U | --- |
| Sodium | 50000 | | 12800 | 15700 | --- |
| Thallium | 2 | | 2 U | 2 U | --- |
| Vanadium | NA | | 50 U | 50 U | --- |
| Zinc | 2000 | | 27.4 | 46.6 | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | SS P1 DUP 4/26/2011 ug/l | SS P2 4/26/2011 ug/l | SS P3 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | --- | --- | --- |
| Antimony | 6 | | --- | --- | --- |
| Arsenic | 3 | | **6.6 Y** | **7 Y** | 3 U |
| Barium | 6000 | | --- | --- | --- |
| Beryllium | 1 | | --- | --- | --- |
| Cadmium | 4 | | --- | --- | --- |
| Calcium | NA | | --- | --- | --- |
| Chromium | 70 | | --- | --- | --- |
| Cobalt | NA | | --- | --- | --- |
| Copper | 1300 | | --- | --- | --- |
| Iron | 300 | | --- | --- | --- |
| Lead | 5 | | --- | --- | --- |
| Magnesium | NA | | --- | --- | --- |
| Manganese | 50 | | --- | --- | --- |
| Mercury | 2 | | --- | --- | --- |
| Nickel | 100 | | --- | --- | --- |
| Potassium | NA | | --- | --- | --- |
| Selenium | 40 | | --- | --- | --- |
| Silver | 40 | | --- | --- | --- |
| Sodium | 50000 | | --- | --- | --- |
| Thallium | 2 | | --- | --- | --- |
| Vanadium | NA | | --- | --- | --- |
| Zinc | 2000 | | --- | --- | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | TFP-94-1R 4/27/2011 ug/l | TT P1 4/27/2011 ug/l | TT P2 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | --- | --- | --- |
| Antimony | 6 | | --- | --- | --- |
| Arsenic | 3 | | **73.9 Y** | 3 U | 3 U |
| Barium | 6000 | | --- | --- | --- |
| Beryllium | 1 | | --- | --- | --- |
| Cadmium | 4 | | --- | --- | --- |
| Calcium | NA | | --- | --- | --- |
| Chromium | 70 | | --- | --- | --- |
| Cobalt | NA | | --- | --- | --- |
| Copper | 1300 | | --- | --- | --- |
| Iron | 300 | | --- | --- | --- |
| Lead | 5 | | --- | --- | --- |
| Magnesium | NA | | --- | --- | --- |
| Manganese | 50 | | --- | --- | --- |
| Mercury | 2 | | --- | --- | --- |
| Nickel | 100 | | --- | --- | --- |
| Potassium | NA | | --- | --- | --- |
| Selenium | 40 | | --- | --- | --- |
| Silver | 40 | | --- | --- | --- |
| Sodium | 50000 | | --- | --- | --- |
| Thallium | 2 | | --- | --- | --- |
| Vanadium | NA | | --- | --- | --- |
| Zinc | 2000 | | --- | --- | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | TT P3 4/27/2011 ug/l | YY P1 4/26/2011 ug/l | YY P2 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | --- | --- | --- |
| Antimony | 6 | | --- | --- | --- |
| Arsenic | 3 | | 3 U | 3 U | **3.8 Y** |
| Barium | 6000 | | --- | --- | --- |
| Beryllium | 1 | | --- | --- | --- |
| Cadmium | 4 | | --- | --- | --- |
| Calcium | NA | | --- | --- | --- |
| Chromium | 70 | | --- | --- | --- |
| Cobalt | NA | | --- | --- | --- |
| Copper | 1300 | | --- | --- | --- |
| Iron | 300 | | --- | --- | --- |
| Lead | 5 | | --- | --- | --- |
| Magnesium | NA | | --- | --- | --- |
| Manganese | 50 | | --- | --- | --- |
| Mercury | 2 | | --- | --- | --- |
| Nickel | 100 | | --- | --- | --- |
| Potassium | NA | | --- | --- | --- |
| Selenium | 40 | | --- | --- | --- |
| Silver | 40 | | --- | --- | --- |
| Sodium | 50000 | | --- | --- | --- |
| Thallium | 2 | | --- | --- | --- |
| Vanadium | NA | | --- | --- | --- |
| Zinc | 2000 | | --- | --- | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 3-7**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | YY P3 / 4/26/2011 / ug/l |
|---|---|---|---|
| Aluminum | 200 | | --- |
| Antimony | 6 | | --- |
| Arsenic | 3 | | 3 U |
| Barium | 6000 | | --- |
| Beryllium | 1 | | --- |
| Cadmium | 4 | | --- |
| Calcium | NA | | --- |
| Chromium | 70 | | --- |
| Cobalt | NA | | --- |
| Copper | 1300 | | --- |
| Iron | 300 | | --- |
| Lead | 5 | | --- |
| Magnesium | NA | | --- |
| Manganese | 50 | | --- |
| Mercury | 2 | | --- |
| Nickel | 100 | | --- |
| Potassium | NA | | --- |
| Selenium | 40 | | --- |
| Silver | 40 | | --- |
| Sodium | 50000 | | --- |
| Thallium | 2 | | --- |
| Vanadium | NA | | --- |
| Zinc | 2000 | | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-8**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | 38R 4/29/2011 ug/l | AAA 4/29/2011 ug/l | CCC-R 4/30/2011 ug/l |
|---|---|---|---|---|---|
| Chloride | 250000 | | 30200 | 47900 | 19900 |
| Cyanide | 100 | | --- | 10 U | 10 U |
| Phenols | 2000 | | --- | 200 U | 200 U |
| Gross Alpha | 15 | pci/l | --- | --- | 3.7 |
| Gross Beta | 50 | pci/l | --- | --- | 11 |
| Radium 226 / 228 Combined | 5 | pci/l | -- | -- | 0.82 U |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

Table 3-8
Groundwater Analytical Results
Other Data
2011 First Half Site Wide Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | CCC-R DUP 4/30/2011 ug/l | EEE-R 4/30/2011 ug/l | III 4/29/2011 ug/l |
|---|---|---|---|---|---|
| Chloride | 250000 | | 22700 | 12400 | 89100 |
| Cyanide | 100 | | 10 U | 10 U | --- |
| Phenols | 2000 | | 200 U | 200 U | --- |
| Gross Alpha | 15 | pci/l | 3.8 | 1.88 U | --- |
| Gross Beta | 50 | pci/l | 9.2 | 3.6 LT | --- |
| Radium 226 / 228 Combined | 5 | pci/l | 0.112 | 0.99 U | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-8**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | KKK 4/29/2011 ug/l | MW-1A 4/30/2011 ug/l | MW-2 4/28/2011 ug/l |
|---|---|---|---|---|---|
| Chloride | 250000 | -- | 13900 | 59500 | 173000 |
| Cyanide | 100 | -- | --- | 17 | --- |
| Phenols | 2000 | -- | --- | **2700 Y** | --- |
| Gross Alpha | 15 | pci/l | 1.7 U | --- | --- |
| Gross Beta | 50 | pci/l | 3.1 U | --- | --- |
| Radium 226 / 228 Combined | 5 | pci/l | 0.87 U | -- | |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

O'BRIEN & GERE ENGINEERS, INC.

**Table 3-8**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Site Wide Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | MW-22R 4/29/2011 ug/l |
|---|---|---|---|
| Chloride | 250000 | -- | 73400 |
| Cyanide | 100 | -- | 10 U |
| Phenols | 2000 | -- | 200 U |
| Gross Alpha | 15 | pci/l | --- |
| Gross Beta | 50 | pci/l | --- |
| Radium 226 / 228 Combined | 5 | pci/l | --- |

NOTES: U = not detected, J = estimated value, --- = Not Analyzed,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D1 4/28/2011 ug/l PDB | RCRA-D2 4/26/2011 ug/l PDB | RCRA-D3 4/26/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D1 4/28/2011 ug/l PDB | RCRA-D2 4/26/2011 ug/l PDB | RCRA-D3 4/26/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

Table 4-2
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D4 4/26/2011 ug/l PDB | RCRA-D5 4/26/2011 ug/l PDB | RCRA-D6 4/26/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D4 4/26/2011 ug/l PDB | RCRA-D5 4/26/2011 ug/l PDB | RCRA-D6 4/26/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

Table 4-2
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D7 4/26/2011 ug/l PDB | RCRA-D8 4/28/2011 ug/l PDB | RCRA-D9 4/28/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 0.84 J | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D7 4/26/2011 ug/l PDB | RCRA-D8 4/28/2011 ug/l PDB | RCRA-D9 4/28/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 0.26 J | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 0.49 J | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 0.32 J | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D10 4/28/2011 ug/l PDB | RCRA-D11 4/27/2011 ug/l PDB | RCRA-D12 4/27/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | 1 U |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 1 U |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | 1 U |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D10 4/28/2011 ug/l PDB | RCRA-D11 4/27/2011 ug/l PDB | RCRA-D12 4/27/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 1 U |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 1.1 J |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 0.29 J | 1 U | 1 U |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | 1 U |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D13 4/27/2011 ug/l PDB | RCRA-D14 4/27/2011 ug/l PDB | RCRA-D15 4/27/2011 ug/l PDB |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1 U | 1 U | 1.1 |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U | 1 U | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 50 | | 1 U | 1 U | 1.2 |
| 1,1-Dichloroethene | 1 | | 1 U | 1 U | **4.7 Y** |
| 1,2,4-Trichlorobenzene | 9 | | 5 U | 5 U | 1.8 J |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U | 1 U | 1 U |
| 1,2-Dichloroethene (total) | NA | | 1 U | 1 U | 4.8 |
| 1,2-Dichloropropane | 1 | | 1 U | 1 U | 0.56 J |
| 1,3,5-Trimethylbenzene | NA | | 5 U | 5 U | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U | 1 U | 1 U |
| 1,4-Dioxane | NA | | 130 U | 130 U | 130 U |
| 2-Butanone | 300 | | 10 U | 10 U | 10 U |
| 2-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 2-Hexanone | 100 | | 5 U | 5 U | 5 U |
| 2-Nitropropane | NA | | 10 U | 10 U | 10 U |
| 4-Chlorotoluene | NA | | 5 U | 5 U | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U | 5 U | 5 U |
| Acetone | 6000 | | 10 U | 10 U | 10 U |
| Acrolein | 4 | | 50 U | 50 U | 50 U |
| Acrylonitrile | 2 | | 50 U | 50 U | 50 U |
| Benzene | 1 | | 1 U | 1 U | 1 U |
| Bromodichloromethane | 1 | | 1 U | 1 U | 1 U |
| Bromoform | 4 | | 4 U | 4 U | 4 U |
| Bromomethane | 10 | | 2 U | 2 U | 2 U |
| Carbon Disulfide | 700 | | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 1 | | 1 U | 1 U | **24.2 Y** |
| Chlorobenzene | 50 | | 1 U | 1 U | 1 U |
| Chlorobromomethane | NA | | 5 U | 5 U | 5 U |
| Chloroethane | 100 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D13 4/27/2011 ug/l PDB | RCRA-D14 4/27/2011 ug/l PDB | RCRA-D15 4/27/2011 ug/l PDB |
|---|---|---|---|---|---|
| Chloroform | 70 | | 1 U | 1 U | 4 |
| Chloromethane | 100 | | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 70 | | 1 U | 1 U | 4.8 |
| cis-1,3-Dichloropropylene | 1 | | 1 U | 1 U | 1 U |
| Cyclohexane | NA | | 5 U | 5 U | 5 U |
| Dibromochloromethane | 1 | | 1 U | 1 U | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U | 5 U | 5 U |
| Diisopropyl ether | 20000 | | 5 U | 5 U | 5 U |
| Ethyl acetate | 6000 | | 5 U | 5 U | 5 U |
| Ethyl Acrylate | NA | | 5 U | 5 U | 5 U |
| Ethyl ether | 1000 | | 5 U | 5 U | 5 U |
| Ethylbenzene | 700 | | 1 U | 1 U | 1 U |
| Freon 113 | NA | | 5 U | 5 U | 5 U |
| Isopropylbenzene | 700 | | 2 U | 2 U | 2 U |
| Methyl acetate | 7000 | | 5 U | 5 U | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U | 1 U | 1 U |
| Methylacrylonitrile | NA | | 10 U | 10 U | 10 U |
| Methylcyclohexane | NA | | 5 U | 5 U | 5 U |
| Methylene Chloride | 3 | | 2 U | 2 U | 2 U |
| o-Xylene | NA | | 1 U | 1 U | 1 U |
| Styrene | 100 | | 5 U | 5 U | 5 U |
| Tetrachloroethene | 1 | | 1 U | 1 U | **37.2 Y** |
| Toluene | 600 | | 1 U | 1 U | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U | 1 U | 1 U |
| Trichloroethene | 1 | | 1 U | 1 U | **9.9 Y** |
| Trichlorofluoromethane | 2000 | | 5 U | 5 U | 5 U |
| Vinyl Chloride | 1 | | 1 U | 1 U | 1 U |
| Xylene (Total) | 1000 | | 1 U | 1 U | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-2**
**Groundwater Analytical Results**
**8260 Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D15 DUP 4/27/2011 ug/l PDB |
|---|---|---|---|
| 1,1,1-Trichloroethane | 30 | | 1.2 |
| 1,1,2,2-Tetrachloroethane | 1 | | 1 U |
| 1,1,2-Trichloroethane | 3 | | 1 U |
| 1,1-Dichloroethane | 50 | | 1.2 |
| 1,1-Dichloroethene | 1 | | **4.6 Y** |
| 1,2,4-Trichlorobenzene | 9 | | 1.7 J |
| 1,2-Dibromo-3-chloropropane | 0.02 | | 10 U |
| 1,2-Dibromoethane | 0.03 | | 2 U |
| 1,2-Dichlorobenzene | 600 | | 1 U |
| 1,2-Dichloroethane | 2 | | 1 U |
| 1,2-Dichloroethene (total) | NA | | 4.9 |
| 1,2-Dichloropropane | 1 | | 0.52 J |
| 1,3,5-Trimethylbenzene | NA | | 5 U |
| 1,3-Dichlorobenzene | 600 | | 1 U |
| 1,4-Dichlorobenzene | 75 | | 1 U |
| 1,4-Dioxane | NA | | 130 U |
| 2-Butanone | 300 | | 10 U |
| 2-Chlorotoluene | NA | | 5 U |
| 2-Hexanone | 100 | | 5 U |
| 2-Nitropropane | NA | | 10 U |
| 4-Chlorotoluene | NA | | 5 U |
| 4-Methyl-2-pentanone | 100 | | 5 U |
| Acetone | 6000 | | 10 U |
| Acrolein | 4 | | 50 U |
| Acrylonitrile | 2 | | 50 U |
| Benzene | 1 | | 1 U |
| Bromodichloromethane | 1 | | 1 U |
| Bromoform | 4 | | 4 U |
| Bromomethane | 10 | | 2 U |
| Carbon Disulfide | 700 | | 2 U |
| Carbon Tetrachloride | 1 | | **24.5 Y** |
| Chlorobenzene | 50 | | 1 U |
| Chlorobromomethane | NA | | 5 U |
| Chloroethane | 100 | | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

Table 4-2
Groundwater Analytical Results
8260 Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit / Sample Method | RCRA-D15 DUP 4/27/2011 ug/l PDB |
|---|---|---|---|
| Chloroform | 70 | | 4 |
| Chloromethane | 100 | | 1 U |
| cis-1,2-Dichloroethene | 70 | | 4.9 |
| cis-1,3-Dichloropropylene | 1 | | 1 U |
| Cyclohexane | NA | | 5 U |
| Dibromochloromethane | 1 | | 1 U |
| Dichlorodifluoromethane | 1000 | | 5 U |
| Diisopropyl ether | 20000 | | 5 U |
| Ethyl acetate | 6000 | | 5 U |
| Ethyl Acrylate | NA | | 5 U |
| Ethyl ether | 1000 | | 5 U |
| Ethylbenzene | 700 | | 1 U |
| Freon 113 | NA | | 5 U |
| Isopropylbenzene | 700 | | 2 U |
| Methyl acetate | 7000 | | 5 U |
| Methyl tert butyl ether (MTBE) | 70 | | 1 U |
| Methylacrylonitrile | NA | | 10 U |
| Methylcyclohexane | NA | | 5 U |
| Methylene Chloride | 3 | | 2 U |
| o-Xylene | NA | | 1 U |
| Styrene | 100 | | 5 U |
| Tetrachloroethene | 1 | | **36.3 Y** |
| Toluene | 600 | | 1 U |
| trans-1,2-Dichloroethene | 100 | | 1 U |
| trans-1,3-Dichloropropene | 1 | | 1 U |
| Trichloroethene | 1 | | **9.8 Y** |
| Trichlorofluoromethane | 2000 | | 5 U |
| Vinyl Chloride | 1 | | 1 U |
| Xylene (Total) | 1000 | | 1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D1 4/28/2011 ug/l | RCRA-D2 4/26/2011 ug/l | RCRA-D3 4/26/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2.1 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5.2 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5.2 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5.2 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5.2 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5.2 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 21 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2.1 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2.1 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2.1 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2.1 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5.2 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2.1 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5.2 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5.2 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2.1 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5.2 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5.2 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 21 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5.2 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2.1 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5.2 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5.2 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2.1 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5.2 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2.1 U | 2 | 2 U |
| Aniline | 6 | | 2.1 U | 2 U | 2 U |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5.2 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5.2 U | 5 U | 5 U |
| Benzidine | 20 | | 21 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D1 4/28/2011 ug/l | RCRA-D2 4/26/2011 ug/l | RCRA-D3 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 21 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2.1 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2.1 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2.1 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2.1 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2.1 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2.1 U | 2 U | 2 U |
| Caprolactam | NA | | 2.1 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5.2 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5.2 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2.1 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2.1 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2.1 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2.1 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5.2 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.021 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 21 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2.1 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2.1 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitrosos | 0.8 | | 2.1 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1.2 | 1 U |
| Nitrobenzene | 6 | | 2.1 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5.2 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5.2 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2.1 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D1 4/28/2011 ug/l | RCRA-D2 4/26/2011 ug/l | RCRA-D3 4/26/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5.2 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5.2 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5.2 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5.2 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5.2 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5.2 U | 5 U | 5 U |
| o-Toluidine | NA | | 5.2 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5.2 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.31 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 2.1 U | 2 U | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 2.1 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-3
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D4 4/26/2011 ug/l | RCRA-D5 4/26/2011 ug/l | RCRA-D6 4/26/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | 2 U |
| Aniline | 6 | | 2 U | 2 U | 4.6 |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D4 4/26/2011 ug/l | RCRA-D5 4/26/2011 ug/l | RCRA-D6 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitrosc | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1 U | 1 U |
| Nitrobenzene | 6 | | 2 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-3
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D4 4/26/2011 ug/l | RCRA-D5 4/26/2011 ug/l | RCRA-D6 4/26/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 2 U | 2 U | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D7 4/26/2011 ug/l | RCRA-D8 4/28/2011 ug/l | RCRA-D9 4/28/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | 2 U |
| Aniline | 6 | | 2 U | 2 U | **11.4 Y** |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-3
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID<br>Sample Date<br>Unit | RCRA-D7<br>4/26/2011<br>ug/l | RCRA-D8<br>4/28/2011<br>ug/l | RCRA-D9<br>4/28/2011<br>ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitrosc | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1 U | 4 |
| Nitrobenzene | 6 | | 2 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D7 4/26/2011 ug/l | RCRA-D8 4/28/2011 ug/l | RCRA-D9 4/28/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 0.99 N |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 2 U | 2 U | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D10 4/28/2011 ug/l | RCRA-D11 4/27/2011 ug/l | RCRA-D12 4/27/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | 2 U |
| Aniline | 6 | | 2 U | 2 U | 2 U |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-3
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D10 4/28/2011 ug/l | RCRA-D11 4/27/2011 ug/l | RCRA-D12 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1 U | 1 U |
| Nitrobenzene | 6 | | 2 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-3
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D10 4/28/2011 ug/l | RCRA-D11 4/27/2011 ug/l | RCRA-D12 4/27/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 2 U | 2 U | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D13 4/27/2011 ug/l | RCRA-D14 4/27/2011 ug/l | RCRA-D15 4/27/2011 ug/l |
|---|---|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U | 2 U | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U | 1 U | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U | 5 U | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U | 2 U | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 40 | | 5 U | 5 U | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U | 1 U | 1 U |
| 2-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 100 | | 5 U | 5 U | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U | 2 U | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U | 5 U | 5 U |
| 3-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U | 20 U | 20 U |
| 4-Aminobiphenyl | NA | | 5 U | 5 U | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U | 5 U | 5 U |
| 4-Chloroaniline | 30 | | 5 U | 5 U | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100 | | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100 | | 10 U | 10 U | 10 U |
| Acenaphthene | 400 | | 1 U | 1 U | 1 U |
| Acenaphthylene | 100 | | 1 U | 1 U | 1 U |
| Acetophenone | 700 | | 2 U | 2 U | 2 U |
| Aniline | 6 | | 2 U | 2 U | 2 U |
| Anthracene | 2000 | | 1 U | 1 U | 1 U |
| Atrazine | 3 | | 5 U | 5 U | 5 U |
| Benzaldehyde | NA | | 5 U | 5 U | 5 U |
| Benzidine | 20 | | 20 U | 20 U | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U | 0.1 U | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D13 4/27/2011 ug/l | RCRA-D14 4/27/2011 ug/l | RCRA-D15 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U | 1 U | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U | 0.1 U | 0.1 U |
| Benzoic Acide | 30000 | | 20 U | 20 U | 20 U |
| Benzyl Alcohol | 2000 | | 2 U | 2 U | 2 U |
| Biphenyl | 400 | | 1 U | 1 U | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U | 2 U | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Caprolactam | NA | | 2 U | 2 U | 2 U |
| Carbazole | 100 | | 1 U | 1 U | 1 U |
| Catechol | NA | | 10 U | 10 U | 10 U |
| Chlorophenols | NA | | 5 U | 5 U | 5 U |
| Chrysene | 5 | | 1 U | 1 U | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 100 | | 5 U | 5 U | 5 U |
| Diethyl Phthalate | 6000 | | 2 U | 2 U | 2 U |
| Dimethyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U | 2 U | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U | 2 U | 2 U |
| Diphenylamine | 200 | | 5 U | 5 U | 5 U |
| Fluoranthene | 300 | | 1 U | 1 U | 1 U |
| Fluorene | 300 | | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U | 1 U | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U | 20 U | 20 U |
| Hexachloroethane | 7 | | 2 U | 2 U | 2 U |
| Hydroquinone | NA | | 10 U | 10 U | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 40 | | 2 U | 2 U | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U | 2 U | 2 U |
| Naphthalene | 300 | | 1 U | 1 U | 1 U |
| Nitrobenzene | 6 | | 2 U | 2 U | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D13 4/27/2011 ug/l | RCRA-D14 4/27/2011 ug/l | RCRA-D15 4/27/2011 ug/l |
|---|---|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U | 5 U | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosomorpholine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopiperidine | NA | | 5 U | 5 U | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U | 5 U | 5 U |
| o-Chloroaniline | NA | | 5 U | 5 U | 5 U |
| o-Toluidine | NA | | 5 U | 5 U | 5 U |
| Pentachlorobenzene | NA | | 5 U | 5 U | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 100 | | 1 U | 1 U | 1 U |
| Phenol | 2000 | | 2 U | 2 U | 2 U |
| Pyrene | 200 | | 1 U | 1 U | 1 U |
| Pyridine | NA | | 2 U | 2 U | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-3
Groundwater Analytical Results
8270 Semi Volatile Organic Compound Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D15 DUP 4/27/2011 ug/l |
|---|---|---|---|
| 1,2,4,5-Tetrachlorobenzene | NA | | 2 U |
| 1,2-Diphenylhydrazine | 20 | | 1 U |
| 1,4-Naphthoquinone | NA | | 5 U |
| 2,4,5-Trichlorophenol | 700 | | 5 U |
| 2,4,6-Trichlorophenol | 20 | | 5 U |
| 2,4-Dichlorophenol | 20 | | 5 U |
| 2,4-Dimethylphenol | 100 | | 5 U |
| 2,4-Dinitrophenol | 40 | | 20 U |
| 2,4-Dinitrotoluene | NA | | 2 U |
| 2,6-Dinitrotoluene | 10 | | 2 U |
| 2-Chloronaphthalene | 600 | | 2 U |
| 2-Chloronitrobenzene | NA | | 2 U |
| 2-Chlorophenol | 40 | | 5 U |
| 2-Methylnaphthalene | 100 | | 1 U |
| 2-Methylphenol | 5 | | 2 U |
| 2-Nitroaniline | 100 | | 5 U |
| 2-Nitrophenol | 100 | | 5 U |
| 3 & 4-Methylphenol | 5 | | 2 U |
| 3,3'-Dichlorobenzidine | 30 | | 5 U |
| 3-Nitroaniline | 100 | | 5 U |
| 4,6-Dinitro-2-Methylphenol | 100 | | 20 U |
| 4-Aminobiphenyl | NA | | 5 U |
| 4-Bromophenyl Phenyl Ether | 100 | | 2 U |
| 4-chloro-3-Methyl Phenol | 100 | | 5 U |
| 4-Chloroaniline | 30 | | 5 U |
| 4-Chlorophenyl Phenyl Ether | 100 | | 2 U |
| 4-Nitroaniline | 100 | | 5 U |
| 4-Nitrophenol | 100 | | 10 U |
| Acenaphthene | 400 | | 1 U |
| Acenaphthylene | 100 | | 1 U |
| Acetophenone | 700 | | 2 U |
| Aniline | 6 | | **11.8 Y** |
| Anthracene | 2000 | | 1 U |
| Atrazine | 3 | | 5 U |
| Benzaldehyde | NA | | 5 U |
| Benzidine | 20 | | 20 U |
| Benzo(a)Anthracene | 0.1 | | 0.1 U |
| Benzo(a)Pyrene | 0.1 | | 0.1 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D15 DUP 4/27/2011 ug/l |
|---|---|---|---|
| Benzo(b)Fluoranthene. | 0.2 | | 0.1 U |
| Benzo(g,h,i)Perylene | 100 | | 1 U |
| Benzo(k)Fluoranthene | 0.5 | | 0.1 U |
| Benzoic Acide | 30000 | | 20 U |
| Benzyl Alcohol | 2000 | | 2 U |
| Biphenyl | 400 | | 1 U |
| bis(2-Chloroethoxy)Methane | 100 | | 2 U |
| bis(2-Chloroethyl)Ether | 7 | | 2 U |
| bis(2-Chloroisopropyl)Ether | 300 | | 2 U |
| bis(2-Ethylhexyl)Phthalate | 3 | | 2 U |
| Butyl Benzyl Phthalate | 100 | | 2 U |
| Caprolactam | NA | | 2 U |
| Carbazole | 100 | | 1 U |
| Catechol | NA | | 10 U |
| Chlorophenols | NA | | 5 U |
| Chrysene | 5 | | 1 U |
| Dibenzo(a,h)Anthracene | 0.3 | | 0.1 U |
| Dibenzofuran | 100 | | 5 U |
| Diethyl Phthalate | 6000 | | 2 U |
| Dimethyl Phthalate | 100 | | 2 U |
| di-n-Butyl Phthalate | 700 | | 2 U |
| di-n-Octyl Phthalate | 100 | | 2 U |
| Diphenylamine | 200 | | 5 U |
| Fluoranthene | 300 | | 1 U |
| Fluorene | 300 | | 1 U |
| Hexachlorobenzene | 0.02 | | 0.02 U |
| Hexachlorobutadiene | 1 | | 1 U |
| Hexachlorocyclopentadiene | 40 | | 20 U |
| Hexachloroethane | 7 | | 2 U |
| Hydroquinone | NA | | 10 U |
| Indeno(1,2,3-Cd)Pyrene | 0.2 | | 0.1 U |
| Isophorone | 40 | | 2 U |
| Methanamine, N-Methyl-N-Nitros | 0.8 | | 2 U |
| Naphthalene | 300 | | 5.8 |
| Nitrobenzene | 6 | | 2 U |
| n-Nitrosodiethylamine | NA | | 5 U |
| n-Nitrosodi-n-Butylamine | NA | | 5 U |
| n-Nitroso-di-n-Propylamine | 10 | | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

**Table 4-3**
**Groundwater Analytical Results**
**8270 Semi Volatile Organic Compound Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D15 DUP 4/27/2011 ug/l |
|---|---|---|---|
| n-Nitrosodiphenylamine | 10 | | 5 U |
| n-Nitrosomethylethylamine | NA | | 5 U |
| n-Nitrosomorpholine | NA | | 5 U |
| n-Nitrosopiperidine | NA | | 5 U |
| n-Nitrosopyrrolidine | NA | | 5 U |
| o-Chloroaniline | NA | | 5 U |
| o-Toluidine | NA | | 0.93 N |
| Pentachlorobenzene | NA | | 5 U |
| Pentachlorophenol | 0.3 | | 0.3 U |
| Phenanthrene | 100 | | 1 U |
| Phenol | 2000 | | 2 U |
| Pyrene | 200 | | 1 U |
| Pyridine | NA | | 2 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria, N = negate,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed, R = rejected

Table 4-4
Groundwater Analytical Results
Metals Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D1 4/28/2011 ug/l | RCRA-D2 4/26/2011 ug/l | RCRA-D3 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | 200 U |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | 3 U | 3 U | 3 U |
| Barium | 6000 | | 200 U | 200 U | 200 U |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 105000 | 114000 | 123000 |
| Chromium | 70 | | 10 U | 10 U | 10 U |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | 100 U | 100 U | 100 U |
| Lead | 5 | | 3 U | 3 U | 3 U |
| Magnesium | NA | | 15200 | 15900 | 16700 |
| Manganese | 50 | | 15 U | 15 U | 15 U |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 10 U |
| Potassium | NA | | 10000 U | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 33600 | 36400 | 35200 |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-4**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D4 4/26/2011 ug/l | RCRA-D5 4/26/2011 ug/l | RCRA-D6 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | **261 Y** |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | 3 U | 3 U | 3 U |
| Barium | 6000 | | 200 U | 200 U | 241 |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 102000 | 114000 | 175000 |
| Chromium | 70 | | 10 U | 69.8 | 12.8 |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | 100 U | **494 Y** | **442 Y** |
| Lead | 5 | | 3 U | 3 U | 3 U |
| Magnesium | NA | | 11800 | 16300 | 26300 |
| Manganese | 50 | | 15 U | **206 Y** | **169 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 10.3 |
| Potassium | NA | | 10000 U | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 31000 | **53200 Y** | **90800 Y** |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-4**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D7 4/26/2011 ug/l | RCRA-D8 4/28/2011 ug/l | RCRA-D9 4/28/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | 200 U |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | 3 U | 3 U | 3 U |
| Barium | 6000 | | 200 U | 426 | 200 U |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 96500 | 85600 | 102000 |
| Chromium | 70 | | 10 U | 10 U | 10 U |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | **403 Y** | 229 | **436 Y** |
| Lead | 5 | | 3 U | 3 U | 3 U |
| Magnesium | NA | | 32300 | 13900 | 16000 |
| Manganese | 50 | | **70.8 Y** | 15 U | **2120 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 10 U |
| Potassium | NA | | 10000 U | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | **119000 Y** | 22200 | 23500 |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-4**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D10 4/28/2011 ug/l | RCRA-D11 4/27/2011 ug/l | RCRA-D12 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | 200 U |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | 3 U | 3 U | 3 U |
| Barium | 6000 | | 692 | 700 | 200 U |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 75800 | 72200 | 136000 |
| Chromium | 70 | | 10 U | 10 U | 10 U |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | 100 U | 100 U | **2110 Y** |
| Lead | 5 | | 3 U | 3 U | 3 U |
| Magnesium | NA | | 8570 | 12300 | 29900 |
| Manganese | 50 | | 15 U | 15 U | **156 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 10 U |
| Potassium | NA | | 10000 U | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 18200 | 13900 | 29800 |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-4**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D13 4/27/2011 ug/l | RCRA-D14 4/27/2011 ug/l | RCRA-D15 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Aluminum | 200 | | 200 U | 200 U | 200 U |
| Antimony | 6 | | 6 U | 6 U | 6 U |
| Arsenic | 3 | | 3 U | 3 U | 3 U |
| Barium | 6000 | | 981 | 574 | 453 |
| Beryllium | 1 | | 1 U | 1 U | 1 U |
| Cadmium | 4 | | 3 U | 3 U | 3 U |
| Calcium | NA | | 67200 | 59700 | 66000 |
| Chromium | 70 | | 10 U | 10 U | 10 U |
| Cobalt | NA | | 50 U | 50 U | 50 U |
| Copper | 1300 | | 10 U | 10 U | 10 U |
| Iron | 300 | | 100 U | 100 U | 100 U |
| Lead | 5 | | 3 U | 3 U | 3 U |
| Magnesium | NA | | 7060 | 8880 | 10700 |
| Manganese | 50 | | 15 U | 15 U | **83.5 Y** |
| Mercury | 2 | | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 100 | | 10 U | 10 U | 10 U |
| Potassium | NA | | 10000 U | 10000 U | 10000 U |
| Selenium | 40 | | 10 U | 10 U | 10 U |
| Silver | 40 | | 10 U | 10 U | 10 U |
| Sodium | 50000 | | 15300 | 15000 | 14300 |
| Thallium | 2 | | 2 U | 2 U | 2 U |
| Vanadium | NA | | 50 U | 50 U | 50 U |
| Zinc | 2000 | | 20 U | 20 U | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-4**
**Groundwater Analytical Results**
**Metals Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D15 DUP 4/27/2011 ug/l |
|---|---|---|---|
| Aluminum | 200 | | 200 U |
| Antimony | 6 | | 6 U |
| Arsenic | 3 | | 3 U |
| Barium | 6000 | | 445 |
| Beryllium | 1 | | 1 U |
| Cadmium | 4 | | 3 U |
| Calcium | NA | | 64100 |
| Chromium | 70 | | 10 U |
| Cobalt | NA | | 50 U |
| Copper | 1300 | | 10 U |
| Iron | 300 | | 100 U |
| Lead | 5 | | 3 U |
| Magnesium | NA | | 10500 |
| Manganese | 50 | | 15 U |
| Mercury | 2 | | 0.2 U |
| Nickel | 100 | | 10 U |
| Potassium | NA | | 10000 U |
| Selenium | 40 | | 10 U |
| Silver | 40 | | 10 U |
| Sodium | 50000 | | 13100 |
| Thallium | 2 | | 2 U |
| Vanadium | NA | | 50 U |
| Zinc | 2000 | | 20 U |

NOTES: U = not detected, J = estimated value, NA = no applicable criteria,
Y = value exceeds Groundwater Quality Standard, --- = Not analyzed

**Table 4-5**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D1 4/28/2011 ug/l | RCRA-D2 4/26/2011 ug/l | RCRA-D3 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Total Organic Carbon | NA | | 1000 U | 1000 U | 1000 U |
| Total Organic Halides (Tox) | NA | | 200 U | 50 U | 50 U |
| Total Disolved Solids | 500000 | | 481000 | **565000 Y** | **700000 Y** |

NOTES: U = not detected, J = estimated value, B = blank contaminated, N = negate,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard
* = MDL exceeds criteria due to limitations of the analytical method, --- = Not analyzed

**Table 4-5**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D4 4/26/2011 ug/l | RCRA-D5 4/26/2011 ug/l | RCRA-D6 4/26/2011 ug/l |
|---|---|---|---|---|---|
| Total Organic Carbon | NA | | 1000 U | 1100 | 1400 |
| Total Organic Halides (Tox) | NA | | 50 U | 50 U | 50 U |
| Total Disolved Solids | 500000 | | **504000 Y** | **656000 Y** | **1180000 Y** |

NOTES: U = not detected, J = estimated value, B = blank contaminated, N = negate,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard
* = MDL exceeds criteria due to limitations of the analytical method, --- = Not analyzed

Table 4-5
Groundwater Analytical Results
Other Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D7 4/26/2011 ug/l | RCRA-D8 4/28/2011 ug/l | RCRA-D9 4/28/2011 ug/l |
|---|---|---|---|---|---|
| Total Organic Carbon | NA | | 1100 | 1000 | 3200 |
| Total Organic Halides (Tox) | NA | | 50 U | 50 U | 50 U |
| Total Disolved Solids | 500000 | | **890000 Y** | 428000 | 413000 |

NOTES: U = not detected, J = estimated value, B = blank contaminated, N = negate,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard
* = MDL exceeds criteria due to limitations of the analytical method, --- = Not analyzed

**Table 4-5**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D10 4/28/2011 ug/l | RCRA-D11 4/27/2011 ug/l | RCRA-D12 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Total Organic Carbon | NA | | 1000 U | 1000 U | 3100 |
| Total Organic Halides (Tox) | NA | | 50 U | 50 U | 100 U |
| Total Disolved Solids | 500000 | | 331000 | 396000 | **631000 Y** |

NOTES: U = not detected, J = estimated value, B = blank contaminated, N = negate,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard
* = MDL exceeds criteria due to limitations of the analytical method, --- = Not analyzed

O'BRIEN & GERE ENGINEERS, INC.

**Table 4-5**
**Groundwater Analytical Results**
**Other Data**
**2011 First Half Impound 8 Wells**
**Wyeth Holdings Corporation**
**Former American Cyanamid Site**
**Bridgewater, New Jersey**

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D13 4/27/2011 ug/l | RCRA-D14 4/27/2011 ug/l | RCRA-D15 4/27/2011 ug/l |
|---|---|---|---|---|---|
| Total Organic Carbon | NA | | 1000 U | 1000 U | 1000 U |
| Total Organic Halides (Tox) | NA | | 50 U | 50 U | 50 U |
| Total Disolved Solids | 500000 | | 309000 | 241000 | 253000 |

NOTES: U = not detected, J = estimated value, B = blank contaminated, N = negate,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard
* = MDL exceeds criteria due to limitations of the analytical method, --- = Not analyzed

Table 4-5
Groundwater Analytical Results
Other Data
2011 First Half Impound 8 Wells
Wyeth Holdings Corporation
Former American Cyanamid Site
Bridgewater, New Jersey

| Chemical Name | GW Quality Standards ug/l | Sample ID / Sample Date / Unit | RCRA-D15 DUP 4/27/2011 ug/l |
|---|---|---|---|
| Total Organic Carbon | NA | | 1000 U |
| Total Organic Halides (Tox) | NA | | 100 U |
| Total Disolved Solids | 500000 | | 271000 |

NOTES: U = not detected, J = estimated value, B = blank contaminated, N = negate,
NA = no applicable criteria, Y = value exceeds Groundwater Quality Standard
* = MDL exceeds criteria due to limitations of the analytical method, --- = Not analyzed

# FIGURES

Jul 22, 2011 - 3:20pm

I:\Pfizer.4529\47194.2011-Pfizer-Bou\Docs\DWG\Sheets\06-03-2011\47194-005 FIG3-1.dwg


## LEGEND

- OVERBURDEN WELL LOCATION
- (1) IMPOUNDMENT DESIGNATION

DRAWING NOTES:

1. MAP BASED ON AMERICAN DIGITAL CARTOGRAPHY, INC. TIGER DATA MAP. BOUND BROOK 7.5 MINUTE QUADRANGLE.
2. GROUNDWATER ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL. (ADD 69.29 FEET FOR SITE DATUM)

| NO. | DATE | REVISION | INIT. |
|---|---|---|---|

WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDGEWATER, NEW JERSEY

BOUND BROOK REMEDIAL PROGRAM
TASK 2.10 SITE-WIDE SEMI-ANNUAL MONITORING

# OVERBURDEN MONITORING WELL LOCATION PLAN

IN CHARGE OF ANGELO J. CARACCIOLO FILE NO. 4529.47194.005

DESIGNED BY CYV CHECKED BY GAS DRAWN BY SED

900 0 900

SCALE:1"=900'-0"

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DATE: 06/07/11

FIGURE 3-1

Jul 22, 2011 - 3:21pm


## LEGEND

- BEDROCK WELL LOCATION
- OPEN BEDROCK WELL RETROFITTED WITH FLUTE LINERS
- (1) IMPOUNDMENT DESIGNATION

DRAWING NOTES:

1. MAP BASED ON AMERICAN DIGITAL CARTOGRAPHY, INC. TIGER DATA MAP. BOUND BROOK 7.5 MINUTE QUADRANGLE.
2. GROUNDWATER ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL. (ADD 69.29 FEET FOR SITE DATUM)

| NO. | DATE | REVISION | INIT. |
|---|---|---|---|
| | | | |

WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDEWATER, NEW JERSEY

BOUND BROOK REMEDIAL PROGRAM
TASK 2.10 SITE-WIDE SEMI-ANNUAL MONITORING

# BEDROCK WELL LOCATION MAP

IN CHARGE OF ANGELO J. CARACCIOLO FILE NO. 4529.47194.006

DESIGNED BY CYV CHECKED BY GAS DRAWN BY SED

1000 0 1000
SCALE: 1"=1000'-0"

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O'BRIEN & GERE



DATE: 06/06/10

FIGURE 3-2

I:\Pfizer.4529\47194.2011-Pfizer-Bou\Docs\DWG\Sheets\06-03-2011\47194-006 FIG3-2.dwg

# Contour Map Reporting Form

**Figure 3-3: Site Wide Semi-Annual Monitoring**
**Main Plant Overburden Groundwater Contour Map**
**(April 25 & 30, 2011)**

This reporting form shall accompany each groundwater contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes ☐ No ☒
   If yes, attach new "Well Certification-Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc...)

2. Are there any monitoring wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes ☒ No ☐
   If yes, identify these wells.
   **-28-R, O-R, 19-R, AAA, CCC-R, EEE-R, MW-7, III, KKK, 16MW-2, 32-R, 34-R, 36-R, 38-R, 41-R, 42R, and TFP-94-1R2 Consistent with historic trends, does not interfere with obtaining representative samples**

3. Are there any monitoring wells present at the site but omitted from the contour map? Yes ☐ No ☒
   Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitoring wells containing separate phase product during this event? Yes ☐ No ☒
   Were any of the monitoring wells with separate phase product included in the groundwater contour map?
   If yes, show the formula used to correct the water table elevation.

5. Has the groundwater flow direction changed more than 45° from the previous ground water contour map? Yes ☐ No ☒
   If yes, discuss the reasons for the change.

6. Has groundwater mounding and/or depressions been identified in the groundwater contour map? Yes ☒ No ☐
   Unless the groundwater mounds and / or depressions are caused by the groundwater remediation system, discuss the reasons for the occurrence.
   **-Mounding beneath Lagoon 7 is likely due to the water level in Lagoon 7**
   **- Mounding beneath the MW-10 area is due to the location between discharge points represented by Cuckolds Brook and the capture of overburden groundwater by the bedrock pumping system.**
   **-Depression beneath MW-05-WS1 area is likely due to pumping of bedrock groundwater at PW-2 and PW-3 capturing overburden groundwater.**

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes ☒ No ☐
   If no, justify inclusion of those wells.

8. Were the groundwater contours
   ☐ computer generated
   ☐ computer aided, or
   ☒ hand-drawn?
   If computer aided or generated, identify the interpolation method(s) used.


NOTE:

1. STAFF GAUGE 10 NOT USED FOR CONTOURING.
2. INTERPRETATION IS SUBJECT TO CHANGE. SEE SECTION 2 OF REPORT.

LEGEND

(17.11) GROUNDWATER ELEV.

STAFF GAUGES

OVERBURDEN WELLS

20 GROUNDWATER CONTOUR, DASHED WHERE INFERRED (CONTOUR INTERVALS VARIED FOR CLARITY)

(NM) NOT MEASURED

POTENTIAL SEEP LOCATION

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IN CHARGE OF ANGELO J. CARACCIOLO
DESIGNED BY CYV CHECKED BY GAS
DRAWN BY SED

1"=250' 250 0 250 500

| NO. | DATE | REVISION | INIT. |
| --- | --- | --- | --- |

O'BRIEN & GERE



WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDGEWATER, NEW JERSEY

TASK 2.10 SITE-WIDE SEMI-ANNUAL MONITORING
# OVERBURDEN WATER TABLE MAP
APRIL 25 & 30, 2011

FILE NO. 4529.47194.003
DATE JUNE 2011

3-3

I:\Pfizer.4529\47194.2011-Pfizer-Bou\Docs\DWG\Sheets\06-03-2011\47194.003-FIG3-3.dwg Jul 29, 2011 - 11:52am

# Contour Map Reporting Form

**Figure 3-4: Site Wide Semi-Annual Monitoring**
**Bedrock Groundwater Contour Map**
**(April 25, 2011)**

This reporting form shall accompany each groundwater contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes ☐ No ☒
If yes, attach new "Well Certification-Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitoring wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes ☐ No ☒
If yes, identify these wells.

3. Are there any monitoring wells present at the site but omitted from the contour map? Yes ☐ No ☒
Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitoring wells containing separate phase product during this event? Yes ☐ No ☒
Were any of the monitoring wells with separate phase product included in the groundwater contour map?
If yes, show the formula used to correct the water table elevation.

5. Has the groundwater flow direction changed more than 45° from the previous ground water contour map? Yes ☐ No ☒
If yes, discuss the reasons for the change.

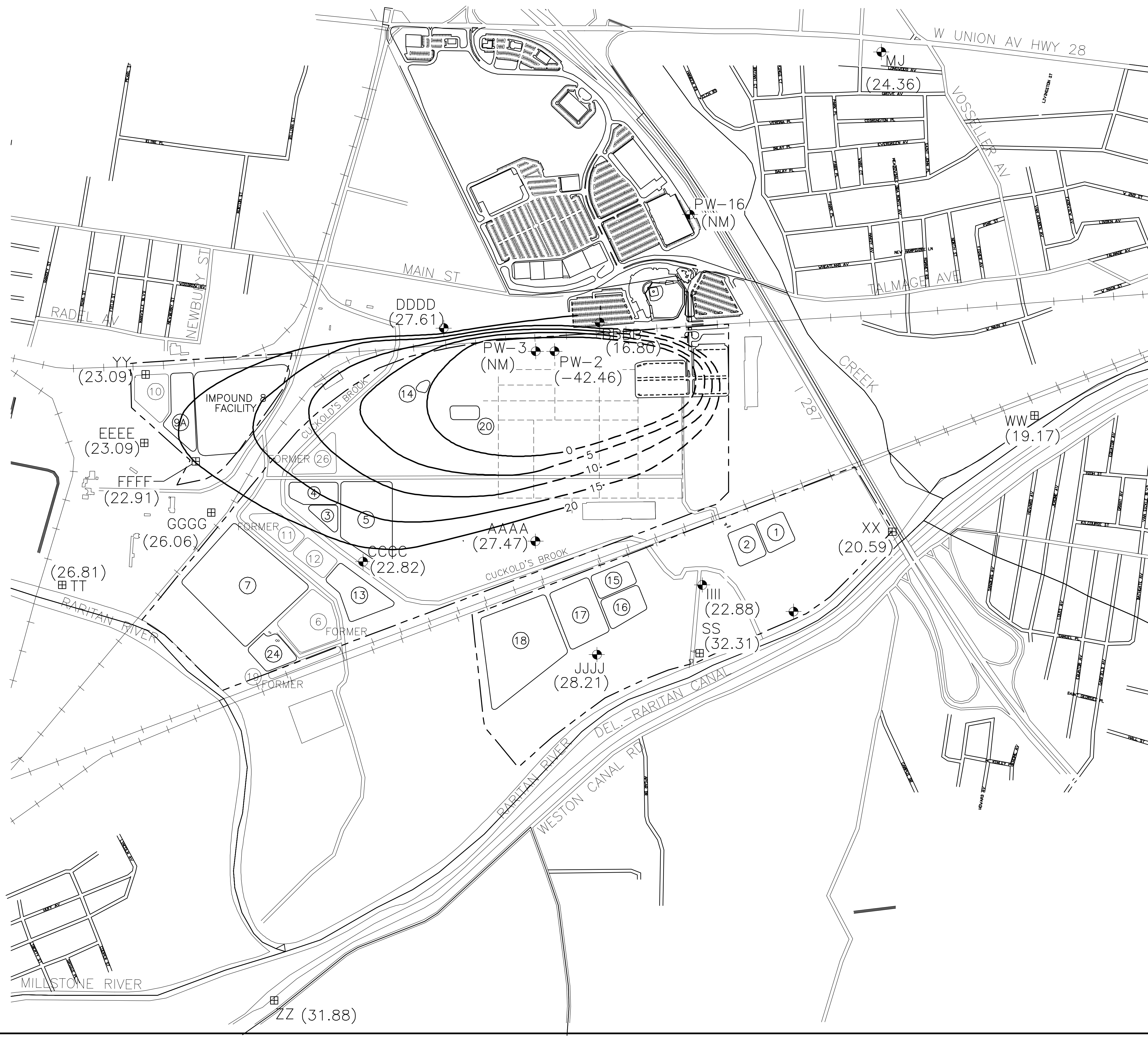
6. Has groundwater mounding and / or depressions been identified in the groundwater contour map? Yes ☒ No ☐
Unless the groundwater mounds and / or depressions are caused by the groundwater remediation system, discuss the reasons for the occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes ☐ No ☒
If no, justify inclusion of those wells.
**- Consistent with historical practice. Wells that did not have screens that intersected the upper moderately conductive zone including SS (Port 1), WW (Port 1), XX (Port 1), ZZ (Port 1), AAAA-S, CCCC-S, GGGG (Port 3), IIII-S, and JJJJ-O were selected based on screen depth that most closely correlated in depth to adjacent wells that had a screen that did intersect the zone.**

8. Were the groundwater contours
☐ computer generated
☐ computer aided, or
☒ hand-drawn?
If computer aided or generated, identify the interpolation method(s) used.

Jul 22, 2011 - 3:24pm

I:\Pfizer.4529\47194.2011-Pfizer-Bou\Docs\DWG\Sheets\06-03-2011\47194-004-FIG3-4.dwg




## LEGEND

- BEDROCK WELL LOCATION
- OPEN BEDROCK WELL RETROFITTED WITH FLUTE LINERS
- (1) IMPOUNDMENT DESIGNATION

DRAWING NOTES:

1. MAP BASED ON AMERICAN DIGITAL CARTOGRAPHY, INC. TIGER DATA MAP. BOUND BROOK 7.5 MINUTE QUADRANGLE.
2. GROUNDWATER ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL. (ADD 69.29 FEET FOR SITE DATUM)

| NO. | DATE | REVISION | INIT. |
|---|---|---|---|

WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDGEWATER, NEW JERSEY

BOUND BROOK REMEDIAL PROGRAM
TASK 2.10 SITE-WIDE SEMI-ANNUAL MONITORING
# BEDROCK GROUNDWATER CONTOUR MAP (APRIL 25, 2011)

IN CHARGE OF ANGELO J. CARACCIOLO FILE NO. 4529.47194.004

DESIGNED BY CYV CHECKED BY GAS DRAWN BY SED

1000 0 1000

SCALE: 1"=1000'-0"

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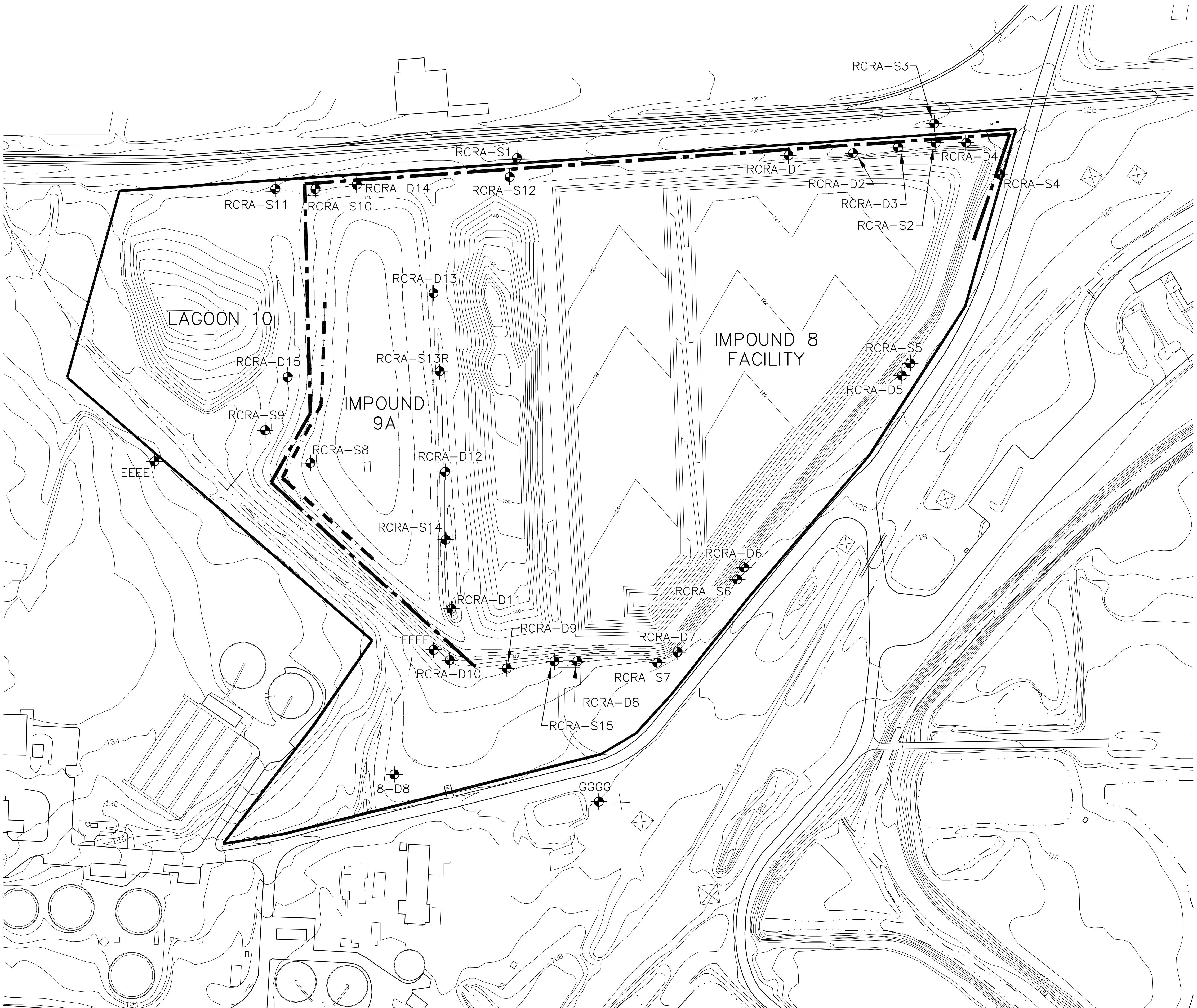
DATE: 06/03/11

FIGURE 3-4

Jul 22, 2011 – 3:25pm

I:\Pfizer.4529\47194.2011–Pfizer–Bou\Docs\DWG\Sheets\06-03-2011\47194-007 FIG4-1.dwg




LEGEND

MONITORING WELL

GROUNDWATER CUT–OFF WALL (APPROX. LOCATION)

GROUNDWATER INTERCEPTOR TRENCH (APPROX. LOCATION)

PROPERTY LINE

LEACHATE COLLECTION SYSTEM MANHOLE/DETECTION SYSTEM SUMP

DRAWING NOTES:

1. EXISTING SITE PLAN INFORMATION SHOWN ON THIS DRAWING OBTAINED FROM AUTOCAD BASED FILE PROVIDED BY AMERICAN CYANAMID COMPANY. DRAWING FILE NUMBER 5225A4.DWG.
2. SURFACE ELEVATIONS ARE REFERENCED TO FACILITY DATUM. (FACILITY DATUM BASED ON U.S.G.S PLUS 69.29 FEET)
3. GROUNDWATER ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL. (ADD 69.29 FEET FOR SITE DATUM)

| NO. | DATE | REVISION | INIT. |
|---|---|---|---|

WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDGEWATER, NEW JERSEY

BOUND BROOK REMEDIAL PROGRAM
TASK 2.10 SITE–WIDE SEMI–ANNUAL MONITORING

# IMP. 8 MONITORING WELL LOCATION PLAN

IN CHARGE OF ANGELO J. CARACCIOLO FILE NO. 4529.47194.007

DESIGNED BY CYV CHECKED BY GAS DRAWN BY SED

200 0 200

SCALE:1"=200'–0"

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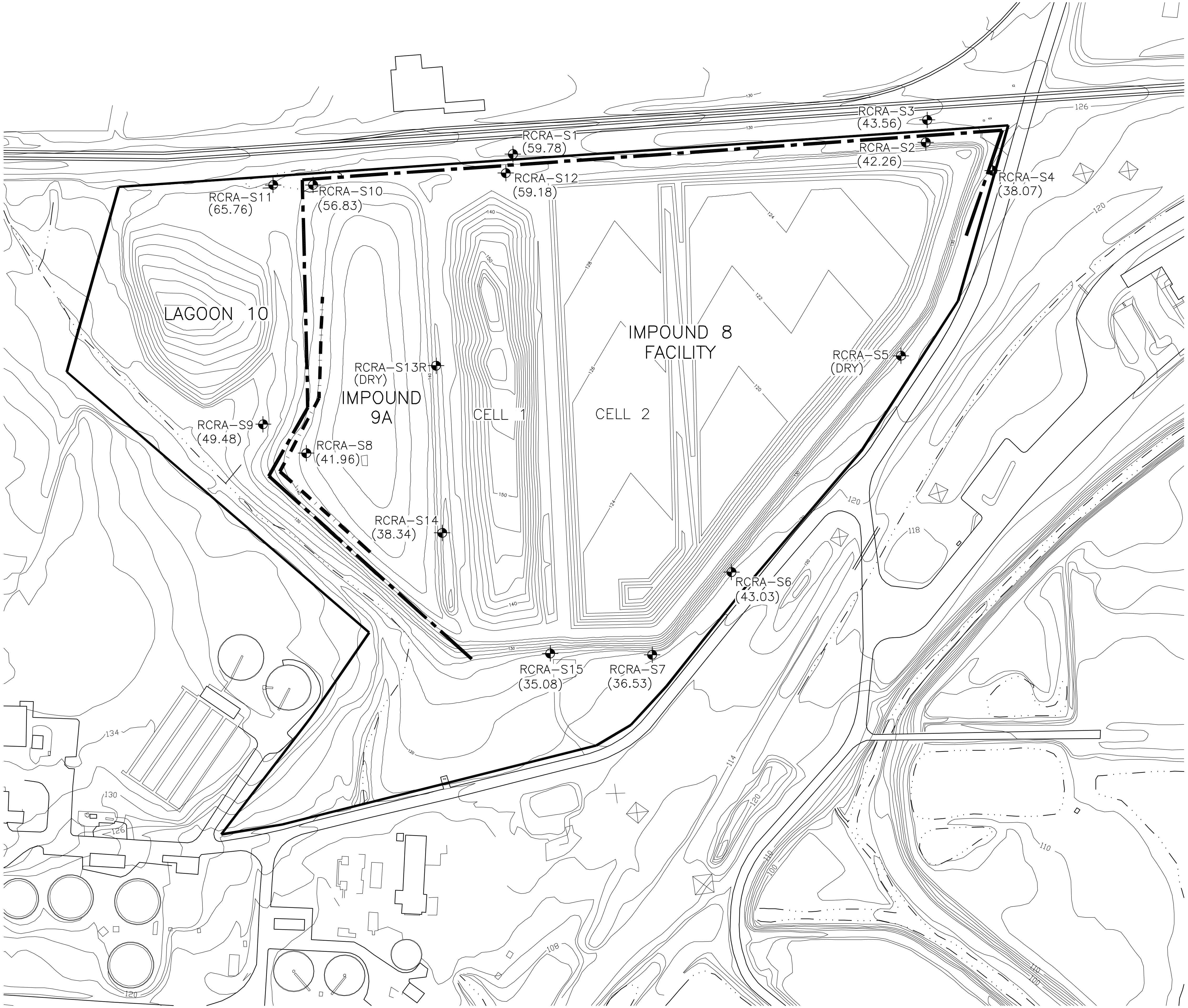
DATE: 06/06/12

FIGURE 4–1

Jul 29, 2011 - 11:56am

I:\Pfizer.4529\47194.2011-Pfizer-Bou\Docs\DWG\Sheets\06-03-2011\47194.001-fig4-2.dwg




## LEGEND

| | |
|---|---|
| (36.83) | GROUNDWATER ELEVATION (ft.) |
| | MONITORING WELL LOCATION |
| | GROUNDWATER CUT-OFF WALL (APPROX. LOCATION) |
| | GROUNDWATER INTERCEPTOR TRENCH (APPROX. LOCATION) |
| | PROPERTY LINE |
| | LIMITS OF WATER |

DRAWING NOTES:

1. EXISTING SITE PLAN INFORMATION SHOWN ON THIS DRAWING OBTAINED FROM AUTOCAD BASED FILE PROVIDED BY AMERICAN CYANAMID COMPANY. DRAWING FILE NUMBER 5225A4.DWG.
2. SURFACE ELEVATIONS ARE REFERENCED TO FACILITY DATUM. (FACILITY DATUM BASED ON U.S.G.S. PLUS 69.29 FEET)
3. GROUNDWATER ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL. (ADD 69.29 FEET FOR SITE DATUM)
4. INTERPRETATION IS SUBJECT TO CHANGE. SEE SECTION 2 OF REPORT.

| NO. | DATE | REVISION | INIT. |
|---|---|---|---|

WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDGEWATER, NEW JERSEY

BOUND BROOK REMEDIAL PROGRAM
TASK 2.10 SITE-WIDE SEMI-ANNUAL MONITORING

# IMP. 8 OVERBURDEN GROUNDWATER ELEVATION PLAN (APRIL 25, 2011)

IN CHARGE OF ANGELO J. CARACCIOLO FILE NO. 4529.47194.001

DESIGNED BY CYV CHECKED BY GAS DRAWN BY SED

200 0 200

SCALE: 1"=200'-0"

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DATE: 06/06/11

FIGURE 4-2

# Contour Map Reporting Form

**Figure 4-3: Impound 8 - Semi-Annual Monitoring**
**Shallow Bedrock Wells Groundwater Contour Map**
**(April 25, 2011)**

This reporting form shall accompany each groundwater contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes ☐ No ☒
   If yes, attach new "Well Certification-Form B" and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc...)

2. Are there any monitoring wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes ☐ No ☒
   If yes, identify these wells.

3. Are there any monitoring wells present at the site but omitted from the contour map? Yes ☐ No ☒
   Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitoring wells containing separate phase product during this measuring event? Yes ☐ No ☒
   Were any of the monitoring wells with separate phase product included in the groundwater contour map?
   If yes, show the formula used to correct the water table elevation.

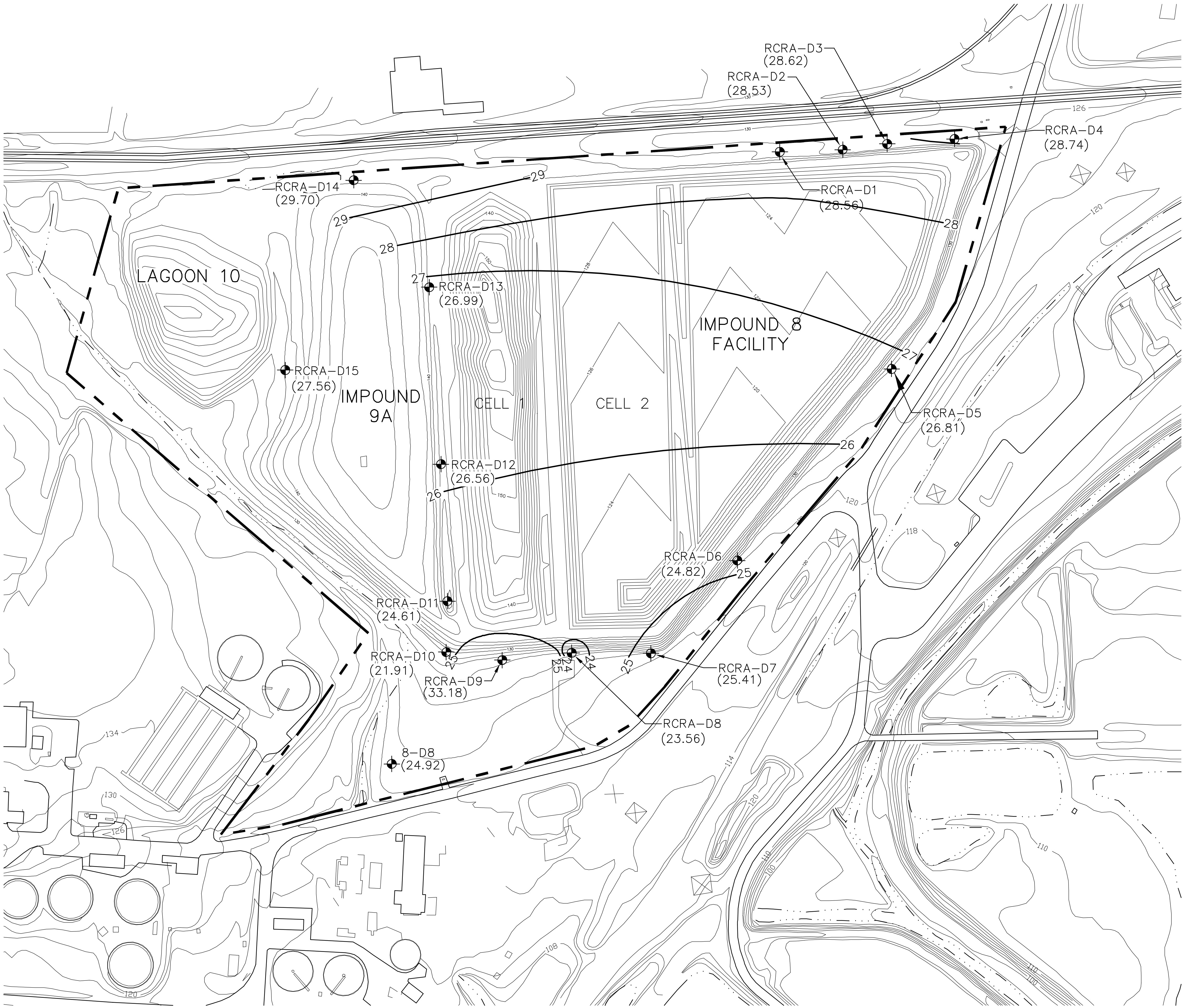
5. Has the groundwater flow direction changed more than 45° from the previous ground water contour map? Yes ☐ No ☒
   If yes, discuss the reasons for the change.

6. Has groundwater mounding and / or depressions been identified in the groundwater contour map? Yes ☐ No ☒
   Unless the groundwater mounds and / or depressions are caused by the groundwater remediation system, discuss the reasons for the occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes ☐ No ☒
   If no, justify inclusion of those wells.

8. Were the groundwater contours
   ☐ computer generated
   ☐ computer aided, or
   ☒ hand-drawn?
   If computer aided or generated, identify the interpolation method(s) used.

Jul 22, 2011 - 3:28pm




## LEGEND

- SHALLOW BEDROCK WELL
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- (28.74) GROUNDWATER ELEVATION
- PROPERTY LINE

DRAWING NOTES:

1. EXISTING SITE PLAN INFORMATION SHOWN ON THIS DRAWING OBTAINED FROM AUTOCAD BASED FILE PROVIDED BY AMERICAN CYANAMID COMPANY. DRAWING FILE NUMBER 5225A4.DWG.
2. SURFACE ELEVATIONS ARE REFERENCED TO FACILITY DATUM. (FACILITY DATUM BASED ON U.S.G.S. PLUS 69.29 FEET)
3. GROUNDWATER ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL. (ADD 69.29 FEET FOR SITE DATUM)
4. GROUNDWATER ELEVATION RCRA-D9 IS PROVIDED BUT WAS NOT USED TO PRODUCE CONTOURS.

| NO. | DATE | REVISION | INIT. |
|---|---|---|---|
| | | | |

WYETH HOLDINGS CORPORATION
FORMER AMERICAN CYANAMID SITE
BRIDGEWATER, NEW JERSEY

BOUND BROOK REMEDIAL PROGRAM
TASK 2.10 IMP. 8 SEMI-ANNUAL MONITORING
IMP. 8 SHAL. BEDROCK WELL GROUND WATER ELEV. MAP (APRIL 25, 2011)

IN CHARGE OF ANGELO J. CARACCIOLO FILE NO. 4529.47194.002

DESIGNED BY CYV CHECKED BY GAS DRAWN BY SED

200 0 200

SCALE:1"=200'-0"

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DATE: 06/06/11

FIGURE 4-3

I:\Pfizer.4529\47194.2011-Pfizer-Bou\Docs\DWG\Sheets\06-03-2011\47194.002-FIG4-3.dwg

# APPENDICES

**Appendix A**

# Procedures

# FLUTe® Procedures

# MANUAL WATER LEVEL MEASUREMENT PROCEDURE

Manual water level measurements will be collected from monitoring wells and Water FLUTe installations, not equipped with dedicated pressure transducers, in accordance with the procedures called out below.

## Procedures Applicable to Water Level Data Collection at all Locations

- A new pair of latex gloves will be donned.
- The electronic water level probe will lowered into the casing/tube until the meter indicates water is reached (audible alarm).
- The probe will be raised above the water level and slowly lowered again until water is indicated.
- The cable will be held at the point designated for water level measurements (top of casing reference point) and a depth reading taken.
- This procedure will be followed three times or until a consistent value is obtained.
- The value will be recorded to the nearest 0.01 feet in a field notebook.
- The time of the measurement and the reference point will be recorded in a field notebook.
- The probe will be raised to the surface and, together with the amount of cable that was wetted in the well, will be decontaminated as follows:

1. Wiped dry with paper towel.
2. Rinsed with potable water and laboratory detergent.
3. Rinsed with distilled/deionized water.

## Procedures Specific to Water Level Data Collection at Water FLUTe Installations

Due to the check valve in the pumping system, the water level in the ½" tube may be higher than the actual head in the formation if the system has not been purged. As such, head measurements must be made after purging the pump system. Each sampling port must therefore be purged prior to water level collection in accordance with the following procedure:

- Connect the compressed nitrogen tank to the quick connect fitting on the ½ inch diameter side of the pump tube.
- Open the valve on the nitrogen tank and adjust the pressure (typically on the order of 100 psi.) to the manufacturers recommended pressure for purging at the installation of interest. Note: All sample ports may be purged simultaneously using a header assembly available through FLUTe.

- Purge the pump tube until the nitrogen gas is discharging from the sampling side of the pump tube (small side of the tube).

- Release the nitrogen tank pressure and disconnect from the quick connect fitting.

- Using a "slime-line" water level meter (probe must be less than 3/8 inch diameter), pass the probe through the quick connect fitting and down the ½ inch diameter tube. (Water level meters suitable for this purpose can be obtained from Herron Instruments).

- Continue measurements until the water level has stopped rising. Record the final measurement. (This typically takes 7 to 8 minutes depending on the hydraulic conductivity of the formation).

Notes: The above procedure is suitable for depths to water of less than approximately 150 feet below the measuring point. For water tables greater than this depth, pressure transducers are required. The water level meter must not have weights below the measuring point as the weight will displace the water in the tube and provide an inaccurate measurement. Additional sampling and purging information may be found at http://www.flut.com/

# Sampling guidelines for *Water FLUTe* systems

(valve tubing pumping system) rev. 2/23/04

## Water flow

Water flows from the formation into the spacer pore space, into the port, and fills the tubing. The first tube filled is the "port tube" volume that flows into the U tube. The U tube consists of the "large tube volume" and the "sampling tube volume" (see the attached drawing).

## Purging

Water is pumped from the tubing by applying a gas pressure to the interface at the static water level in the large tube. The water is driven down in the large tube and up through the second check valve to the surface via the sampling tube. By driving the water with a sufficient gas pressure to drive all of the water in the large tube and the sampling tube to the surface (the "recommended purge pressure"), the water in the U tube is nearly all expelled. The purge stroke is complete when gas is expelled following the water flow. The pressure in the system must then be vented, to allow the U tube to refill by flow via the port tube. The flow from the port tube consists of the port tube water, the water in the pore space of the spacer, and water from the medium. Because of the relatively large volume in the large tube, most of the recharge is from the medium. The recharge will take about as long as the first purge stroke. However, a tight medium will require more time.

Purging the U tube a second time will remove any of the water that has resided in the spacer and port tube volume. That is highly recommended, since the water resident in the tubing and spacer is probably not typical of the formation water. If the refill has been prompt, the second purge water volume will be similar to the first stroke. If in doubt, or if in a sedimentary formation or screened well, a third purge stroke is recommended to remove water that may have been in long contact with the liner or spacer.

## Sampling

The sampling flow is best driven on the third (or fourth) cycle by a pressure less than that needed to drive air through the bottom of the U tube. The pressure recommended is that which will drive the water to near, but not out of, the bottom of the large tube. That recommended pressure, "the sampling pressure," is calculated in the spreadsheet provided with each system.

*The first flow of the sampling cycle sweeps along droplets of water left in the tubing from the purge cycle. That residual water is depleted of volatile components. Tests have shown that the first tube volume of the sample flow should be discarded as depleted in volatiles (the sample tube volume is also calculated in the spreadsheet). Thereafter, the samples can be collected from the tube outflow. The volume to be discarded is shown in the spreadsheet as "wetted vol. sam. tube". The sample water flow rate will slow and finally stop. That occurs as the water column being driven approaches the applied pressure. The typical sampling pressure drives to within 20 ft. of the bottom of the pump tube (the U).*

This procedure should provide an ample sample of good quality drawn directly from the formation.

**Caution:** If the pumping system refills very slowly, there may not be sufficient water in the pump to fill the "sample tube" to the surface when the stroke is performed. In that case, there will be spitting of gas from the sample water and it will be followed by a flow of gas only. The sample water should never show "spitting" and the stroke should never end with gas flow from the sample tube. The proper sample flow will slow until it stops flowing. Should this evidence of insufficient recharge be observed, allow the pump to refill for a longer time. One can tag the water level in the large tube, as described in the head measurement procedure, to assure that the pumping system has been sufficient refilled.

**Measuring the head in the system**

The water level in the large tubes may not be the current water level. After sampling, if there is any leakage of the second check valve (sand in the tube, etc...) the water in the sample tube can backflow into the larger tube, adding to the water that fills the large tube during the recharge. Also, if the water level in the formation is dropping between head measurements, the water level in the large tube will not follow the descent if the first check valve is a good seal. For these two reasons, and for the freezing concern below, it is best to finish the sampling stroke by raising the pressure to the purge pressure value to purge the pumping system of all water. Then upon refilling, the level is the current head for each port. If head measurements are made between sampling events, each port's pumping system should be first be purged to allow the tubing to refill to the current head value.

Note, an access tube is provided for tagging the water level in the interior of the liner. The liner water level should be maintained at the proper level (typically 10 ft above the water table, except for more shallow water tables) to assure that the liner is providing a good seal. If the level is less than that desired, add a small amount of water to raise the level. Be aware that for deep water tables, it may take up to 5 minutes for the water level to equilibrate after an addition. Do not overfill the liner. Estimate the correct addition based upon the hole diameter.

**If the water might freeze in the sampling tubing near the surface,** purge the entire volume of water from each sampling line, after sampling, before leaving it. Use the recommended purge pressure to remove all water, not the sampling pressure. **Each line should be blowing air/N2 when the purge is complete.** If the lines were purged after sampling for head measurements, that is sufficient.

**If the Water FLUTe uses PVDF tubing,** the purge of the entire system after sampling should not be neglected, even if head measurements are not to be made. This removes the water column in the sampling tube. For deep water tables, the long term pressure of the standing water in the sampling tube might lead to excessive creep of the tubing which is susceptible to "cold flow", a characteristic of Teflon like materials. (This is not a concern except for very deep water tables (>300 ft).

In most cases, the performance of a final purge of the system after sampling is useful, even if not essential.

**Simultaneous purge and sampling of all tubes**

The FLUTe pumping system for each port is essentially identical in length, pump volume and elevation in the hole. This allows all ports to be purged and sampled simultaneously for a great saving in sampling time. The only difference for simultaneous sampling is that the pressure source must include a tube to each port fitting at the wellhead. The recommended purge and sample pressures are the same as used for single port sampling.

In some cases, the buoyancy of the sampling system is so great when emptied of water during the simultaneous purge that the tubing bundle can cause the liner to invert. The sampling volume spreadsheet provided with the liner notes whether the system can be purged simultaneously. This is only a problem for smaller hole diameters, many ports, and a small excess head in the liner. However, increasing the excess head in the liner to overcome the buoyancy of the tubing can be a hazard to the liner.

**A short summary is provided as the following checklist:**

<u>Check List</u>

1. Connect the gas driver source to the gas drive tube on the large tube. Set the regulator to the recommended purge pressure.
2. Expel the tube water at the suggested purge pressure. Collect the purged water volume for verification of a good purge. Note the water flow time of the purge stroke.
3. Allow the tubing to refill. Repeat the purge. Collect the purge volume to assure the amount removed is at least the "port tube volume". Was the refill long enough?
4. Purge a third time, if desired.
5. Allow the tubing to refill for the sample stroke.
6. <u>Reduce the driving pressure</u> to the "sampling pressure". Apply the pressure and collect the first flow to measure the discard volume. Discard that water.
7. Reduce the pressure, if needed, to slow the flow and collect the samples.
8. Perform a final purge of the water out of the sampling lines by raising the driving pressure to the purge pressure value.
9. When the sampling system has refilled, tag the water level, if desired, for the current water table. If a port system is refilling very slowly, tag it at a later time.

See the spreadsheet provided with each *Water FLUTe* for the recommended purge and sampling pressures. Those are the pressures that can be used for a simultaneous purge of the several ports, but be sure that the buoyancy of the tubing will not lift the tubing, and the wellhead. The spreadsheet flags the condition where all ports should not be purged simultaneously. In most cases, several of the ports can be purged simultaneously.

**Optimum sampling procedure:**
Since it is often desirable to minimize the amount of time that the sample water resides in the pumping tubing, it is useful to note the actual time that is required for the recharge of the system. Since the fill rate slows dramatically for the last portion of the recharge, it is not necessary to wait for a complete refill. For most formations, the recharge is dominated by the tubing pressure drop. In that case, the time required for the purge stroke to be completed is about the same time required for the refill. (The exception is for a tight formation that recharges the tubing very slowly.) Hence the second purge can be started after waiting the same length of time as the first purge endured. If the second purge is of a similar volume (usually somewhat less) than the first purge volume, the refill time was long enough. After the same delay, the sampling stroke can be initiated. This timing of the strokes allows one to reduce the retention time in the pumping system. For very large sample volumes produced, the refill time can be shortened even more, as long as the sample volume is adequate after the discard of the first flow.

In some situations, the retention time is still too long. FLUTe can often increase the sample tube and port tube diameters for greater flow rates. However, the standard design is well matched for to a wide range of hole diameters, depths, and water table elevations. For very deep wells, the tubing may need to be of higher pressure capacity for the required driving pressures. For water table depths below 700 ft., this may be a concern. In some situations, the use of more expensive fluoropolymer (e.g. PVDF) tubing is warranted to minimize interaction with very low levels of contamination. The normal FLUTe tubing used until June, 2002 was Nylon 11 for its qualities of strength, relatively low contaminant absorption(compared to polyethylene), cost, and elasticity. Nylon 11 does leach butyl benzene sulphonamide in ppb levels. This does not interfere with most contaminant evaluations, in particular the chlorinated solvents and volatile organics. It can be mistaken for HE contamination if not measured carefully. FLUTe initiated a design change to all PVDF tubing in the Water FLUTe systems in 2002 to avoid any concern about tubing interaction with the sample water. However, the prescribed purge is sufficient for the use of Nylon tubing systems.

**Questions:** Call 888-333-2433 and ask for Carl Keller, or a field engineer.

## Geometry of sampling system for each port

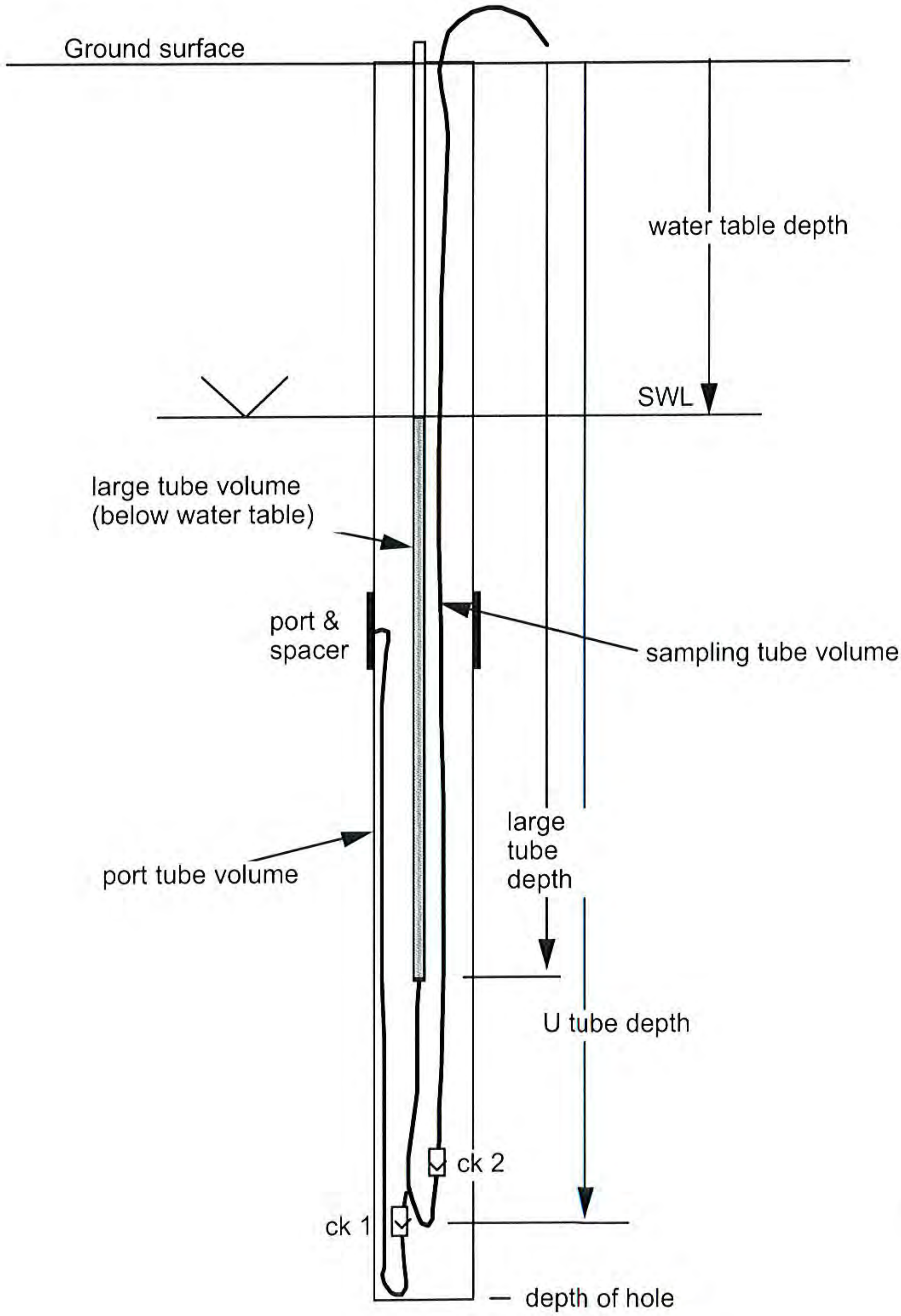


**Fig. 1.. Water FLUTe valved tubing pumping system (Recharge flow)**

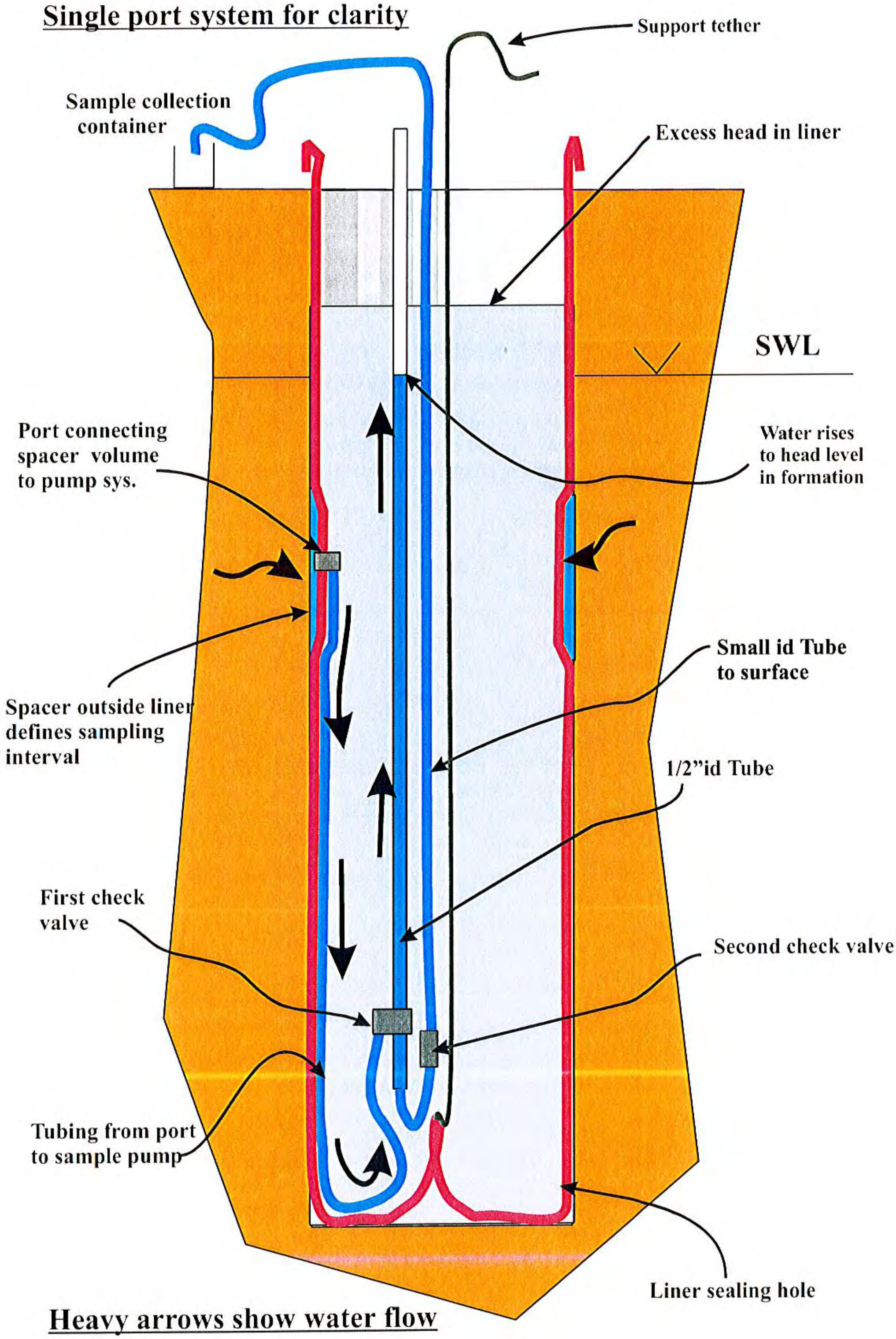
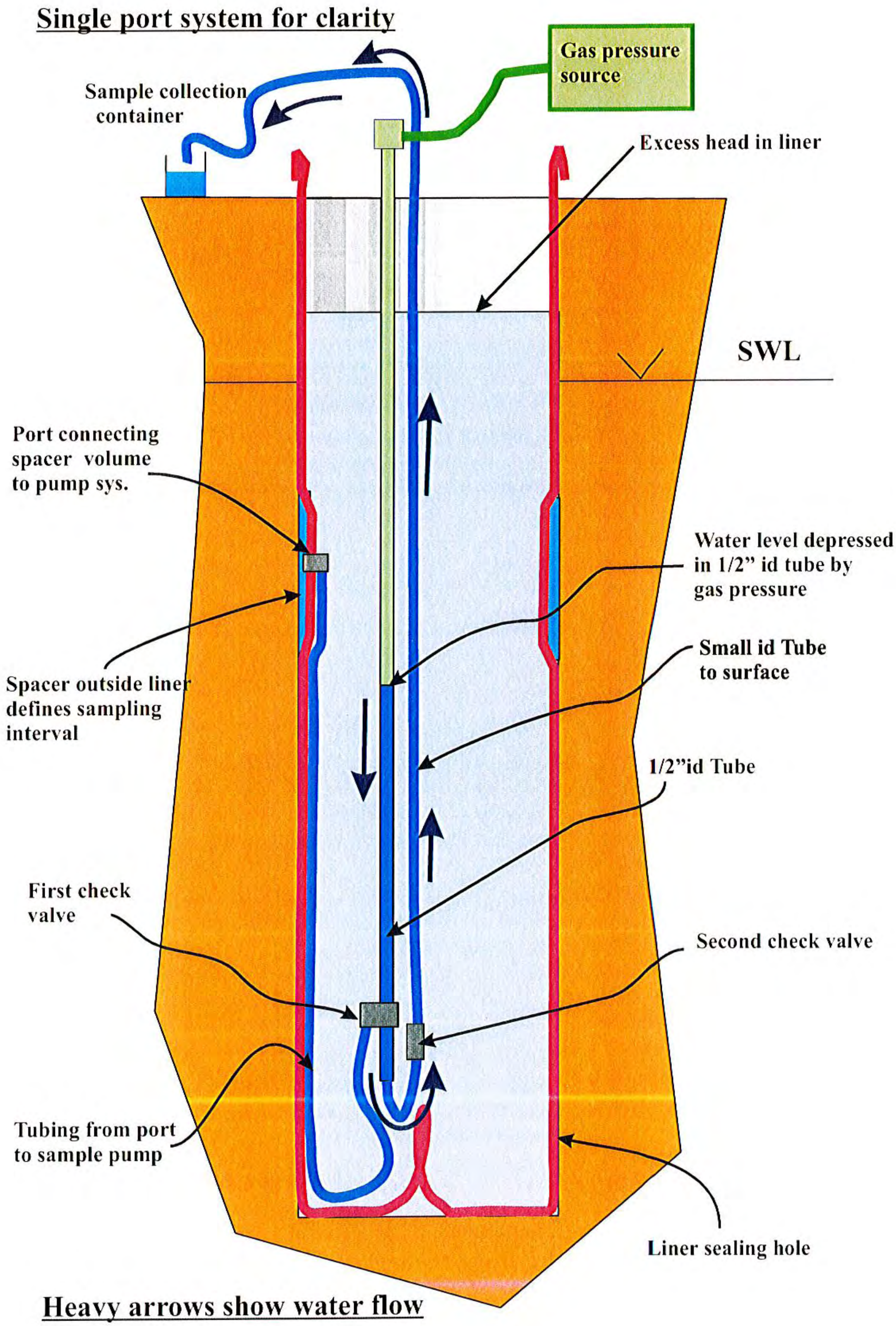


**Fig. 2. Water FLUTe Pump Stroke**



# WATER FLUTe CONSTRUCTION, PURGE VOLUMES AND SAMPLING GUIDELINES

| Well | FLUTe Filling Liquid | Depth# to liquid inside FLUTe [ft] | Depth to FLUTe collar [ft] | Port 1 | | | Port 2 | | | Port 3 | | | Port 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Volume [Gal] | | Recovery | Volume [Gal] | | Recovery | Volume [Gal] | | Recovery | Volume [Gal] | | Recovery |
| | | | | Per stroke | Total | time* [min] | Per stroke | Total | time* [min] | Per stroke | Total | time* [min] | Per stroke | Total | time* [min] |
| **EEEE** | **Water** | | | | | | | | | | | | | | |
| FFFF | Water | | | | | | | | | | | | | | |
| **GGGG** | **Bentonite** | | | | | | | | | | | | | | |
| SS | Barite/Bentonite | | | | | | | | | | | | | | |
| **TT** | **Water** | | | | | | | | | | | | | | |
| WW | *Barite/Bentonite* | | | | | | | | | | | | | | |
| **XX** | **Barite/Bentonite** | | | | | | | | | | | | | | |
| YY | Bentonite | | | | | | | | | | | | | | |
| **ZZ** | **Barite/Bentonite** | | | | | | | | | | | | | | |
| MP03-MP1 | Barite/Bentonite | | | | | | | | | | | | | | |
| **MW05-MP1** | **Barite/Bentonite** | | | | | | | | | | | | | | |
| MP11-MP1 | Barite/Bentonite | | | | | | | | | | | | | | |

# Measured with a conventional water level indicator, by introducing the probe into the 6" FLUTe liner. All depths referred to TOC marker.

*Time required for water level to recover to 20' (or less) below the static water level.

## SAMPLING GUIDELINES:

A. It takes 400 $ft^3$ of $N_2$ (5 small bottles, 80 $ft^3$ ca (recommended) or 2 "T" bottles (300 $ft^3$ ca)) for each sampling event at the 12 FLUTe wells.

**B. Each port must be purged two times before sampling. Except port 3 at Well XX , which must be purged just once.**

C.The pressure for the purge strokes is 110 psi; the sampling stroke is 75 psi. Each stroke takes between 6 and 10 minutes.

D.It takes about two hours to purge and sample each well following these steps:

**1. Set and secure the end of sampling line (1/8") for each port into a plastic container to keep track of the purge volume.**

2. Connect the manifold to the N2 tank and to each of the port's pressurization lines (1/2" quick-disconnect fittings). Make sure fittings click together.

**3. Close the 5 one-way valves in the manifold and set the three-way valve to allow flow from the tank to the ports.**

4.Open the N2 tank valve and set the regulator to 110 psi. Always keep away from the well head when the N2 tank valve is open; if any accidental blow occurs, close the N2 tank valve before doing anything else.

**5. Purge all the ports at the same time, by opening the one-way valves of the lines connected to the ports, and waiting until N2 starts to blow from all the sampling lines. At this time, bleed the N2 from the ports by setting the three-way valve to the position open to the atmosphere, which makes a distinctive gas-flow sound. No other valve needs to be adjusted.**

6.Complete the second purge after the longest recovery time at any port (as stated in the table above) has been reached. Reset the three-way valve to allow N2 flow from the tank to the ports, and wait until N2 starts to blow from all the sampling lines.

**7.Close all the one-way valves. Reduce the regulator pressure to 75 psi; you will need to bleed some N2 by briefly opening the three-way valve to the atmosphere.**

8. Sequentially sample each port, by opening the corresponding one-way valve, discarding the first 1/2 Gal pumped, and starting with any filtered sample (to avoid blowing off the filter with N2 in the event that you run short of water from the port.)

**9. After sampling is completed, close the N2 tank valve, open all the one-way valves, and bleed the N2 still remaining in the ports, by setting the three- way valve to the atmosphere.**

10. Wait until the N2 has bled off; then disconnect the manifold from the well.

**11. Wells TT and XX are exceptions to the above procedure. Both should not be scheduled to be sampled the same day. Both should be scheduled for purging first thing in the morning. The first purge stroke is the same as the other wells. After 15 minutes, P1 and P2 must be purged again. After 15 more minutes, P1 and P2 can be sampled. Then, move to sample another well, and return to well TT 1.5 hours later to purge P3 for the second time; move to another well again and return to well TT after other 1.5 hours to sample P3. For well XX, P3 must be sampled 7 hours after the ( first and only) purging stroke.**

# Passive Diffusion Bag Procedures

**Sampling and Analysis Plan Addendum**
**Bound Brook Facility**
**Pfizer Inc**

This document serves as an addendum to the Sampling and Analysis Plan (SAP) (O'Brien & Gere, October 2001) associated with the semi-annual site-wide groundwater monitoring program at the Former American Cyanamid Company (Cyanamid) Site in Bound Brook, New Jersey. This addendum provides sampling methods for use when collecting groundwater samples for volatile organic compounds (VOCs) using passive diffusion bags (PDBs).

**Background**

The groundwater monitoring program for the Cyanamid site includes site-wide groundwater pumping and monitoring of site-wide wells, as well as the groundwater monitoring requirements for the Impound 8 Resource Conservation and Recovery Act (RCRA) Facility. Elements of the October 2001 SAP were prepared in accordance with the Administrative Consent Order (ACO) between the Cyanamid and the New Jersey Department of Environmental Protection (NJDEP), as amended in May 1994 (ACO Amendment). ). Cyanamid was acquired by American Home Products Corporation (AHP), more recently known as Wyeth, in November 1994. Pfizer Inc (Pfizer) acquired Wyeth in October 2009, and is now responsible for overseeing the monitoring program..

An element of the October 2001 SAP consisted of a description of monitoring well purging and sampling methods. One of the methods described included of the use of a peristaltic pump to purge and sample groundwater from the following shallow overburden monitoring wells (Impoundments 1 & 2 and Main plant wells were added voluntary):

| | |
|---|---|
| Impoundments 1 & 2 wells: | PZ-12-1, PZ-12-2, PZ-12-3, PZ-12-4, PZ-12-5, PZ-12-6, 01-MW-1, 01, MW-2, 01-MW-3, FLOD-W1S, and FLOD-W2S |
| Impoundment 3, 4, and 5 wells: | MW-2, MW-3, MW-5, MW-7, MW-9, and 28R |
| Impoundment 14 wells: | 19R, 21-R, and O-R |
| Impoundment 17/18 wells (Group II): | AAA, CCC-R, EEE-R, III, KKK, and 16 MW-2 |
| Impoundment 19/24 wells: | 32R, 34R, 36R, 38R, 41R, 42R, TFP-94-1R, and P24-91-1 |
| Main Plant Wells: | MW-1A and MW-22R |

During the first and second half sampling events, groundwater samples are collected from overburden monitoring wells as summarized on Table 1:

| **Table 1** | Required Analyses | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Well I.D. | VOCs | SVOCs | TAL Metals | Chlorides | Cyanide | Phenols | Arsenic | Cadmium | Chromium | Alpha & Beta, Radium 226 & 228 |
| PZ-12-1* | X | X | X | | | | | | | |
| PZ-12-2* | X | X | X | | | | | | | |
| PZ-12-3* | X | X | X | | | | | | | |
| PZ-12-4* | X | X | X | | | | | | | |
| PZ-12-5* | X | X | X | | | | | | | |
| PZ-12-6* | X | X | X | | | | | | | |
| 01-MW-1* | X | X | X | | | | | | | |
| 01-MW-2* | X | X | X | | | | | | | |
| 01-MW-3* | X | X | X | | | | | | | |
| FLOD-W1S* | X | X | X | | | | | | | |
| FLOD-W2S* | X | X | X | | | | | | | |
| MW-1A* | X | X | X | X | X | X | | | | |
| MW-22R* | X | X | X | X | X | X | | | | |
| 19-R | X | X | | | | | | | | |
| 21-R | X | | | | | | | | | |
| O-R | X | | | | | | | | | |
| AAA | X | X | X | X | X | X | | | | |
| CCC-R | X | X | X | X | X | X | | | | X |
| EEE-R | X | X | X | X | X | X | | | | X |
| III | X | X | X | X | | | | | | |
| KKK | X | X | X | X | | | | | | X |
| 16MW-2 | | | X | | | | | | | |
| 28R | X | X | | | | | | | | |
| MW-2 | X | X | | X | | | X | X | | |
| 32R | X | | | | | | X | X | | |
| 34R | X | X | | | | | X | | | |
| 38R | X | X | | X | | | X | X | X | |
| 42R | X | X | | | | | X | | | |
| TFP-94-1R | X | X | | | | | X | | | |

Note: * - Monitoring wells added voluntary.

A comment regarding the use of peristaltic purge and sample methods to sample the overburden monitoring wells was received from NJDEP regarding the Fourth Quarter Groundwater Monitoring Report (O'Brien & Gere, January 2005). Specifically, the NJDEP comment indicated that the peristaltic purge method may result in significant loss of volatile organic compounds from samples before the analysis and that submersible purge method or any other comparable method shall be used.

In response to the NJDEP comment, Pfizer proposed the use of PDBs when collecting VOCs from the overburden monitoring wells to minimize the potential for loss of VOCs, and using peristaltic purge and sample methods for the remaining parameters. The following describes the PDB installation and retrieval, and sample collection methods to be used when collecting VOCs from the overburden monitoring wells.

**PDB installation and retrieval, and sample collection**

<u>Passive-Diffusion Bag Sampler Installation</u>

Step 1: Don appropriate personal protective equipment (as required by the Health and Safety Plan).

Step 2: Place plastic sheeting around the well (optional, based on field conditions at the time of sampling).

Step 3: Clean the non-disposable, down-hole monitoring equipment (e.g., water-level probe).

Step 4: Measure and record the depth to water in the well on the groundwater sampling log and in the field logbook. Check to make sure there is sufficient water column within the well so that the PDB will be fully submerged.

Step 5: Remove the PDB sampler from the shipping container.

Step 6: Attach the PDB sampler to the line of the well-specific passive bag harness using the stainless-steel snap hooks.

Step 7: Slowly lower the PDB sampler down the well and attach the harness to the top of the well. The harness for the PDB may be secured to the top of the well using an S-hook or plastic disk that is of larger diameter than the well casing. If infiltration of outside water is a concern, a gripper plug or j-plug may be used to seal the top of the inner well casing. Check that the bottom stainless-steel weight just reaches the bottom of the well indicating that the sampler is properly positioned in the screened interval. The passive bag sampler will generally be placed at the midpoint of the saturated portion of the screened interval of the well. Table 2 provides a summary of the overburden well depths, screen lengths, and installation depths at which the PDBs should be placed within each well. Record time of PDB deployment and weather conditions on the groundwater sampling log and in the field logbook.

| **Table 2**<br>**Well I.D.** | **Well Depth**<br>**(ft BTOC)** | **Screen Length**<br>**(ft)** | **Installation Height of Top of PDB**<br>**Above Bottom of Well (ft)** |
|---|---|---|---|
| Impoundment 1 & 2 | | | |
| PZ-12-1 | 14.7 | 10 | 11.2, 6.2* |
| PZ-12-2 | 14.9 | 10 | 11.4, 6.4* |
| PZ-12-3 | 15.0 | 10 | 11.5, 6.5* |
| PZ-12-4 | 16.8 | 10 | 13.3, 8.3* |
| PZ-12-5 | 14.9 | 10 | 11.4, 6.4* |
| PZ-12-6 | 15.2 | 10 | 11.7, 6.7* |
| 01-MW-1 | 15.4 | NA | 11.9, 6.9* |
| 01-MW-2 | 18.1 | NA | 14.6, 9.6* |
| 01-MW-3 | 17.5 | NA | 14.0, 9.0* |
| FLOD-W1S | 17.4 | 5 | 3.5 |
| FLOD-W2S | 12.4 | 5 | 3.5 |
| Main Plant | | | |
| MW-1A | 20.8 | 5 | 3.5 |
| MW-22R | 27.7 | 5 | 3.5 |
| Impoundment 3, 4, & 5 | | | |
| 28R | 17.8 | 5 | 3.5 |
| MW-2 | 21.1 | 15 | 3.3, 9.3 |
| Impoundment 14 | | | |
| 19-R | 11.6 | 5 | 3.5 |
| 21-R | 22.6 | 5 | 3.5 |
| O-R | 17.9 | 5 | 3.5 |
| Impoundment 15, 16, 17 & 18 | | | |
| AAA | 16.8 | 5 | 3.5 |
| CCC-R | 26.5 | 5 | 3.5 |
| EEE-R | 25.1 | 5 | 3.5 |
| III | 19.8 | 5 | 3.5 |
| KKK | 28.3 | 5 | 3.5 |
| Lagoon 6&7 / Impoundment 19&24 | | | |
| 32R | 20.4 | 5 | 3.5 |
| 34R | 26.3 | 5 | 3.5 |
| 38R | 25.6 | 5 | 3.5 |
| 42R | 24.2 | 5 | 3.5 |
| TFP-94-1R | 19.1 | 8 | 5 |

Note: ft BTOC - feet below top of casing

Impoundments 1 & 2 and Main plant wells were added voluntary

Step 8: Close and lock the well.

Step 9: Record the date and time of placement of the PDB sampler in the well in the field logbook.

Passive-Diffusion Bag Sampler Retrieval and Sample Collection

Step 1: After the equilibration period, unlock and open the well. Slowly remove the PDB sampler from the monitoring well.

Step 2: Remove the PDB sampler from the stainless-steel snap hook and dry with a clean paper towel. Cut a small hole in the PDB sampler using a decontaminated knife or decontaminated stainless-steel scissors. Pour water from the PDB sampler directly into appropriate laboratory sample container for VOC analysis.

Step 3: Complete the sample label and place sample container in a cooler containing wet ice.

Step 4: Record the date and time of sample collection on the chain of custody and in the field logbook. In addition, record in the field log, any pertinent observations of the sample (e.g., physical appearance, the presence of, or lack of, odors, sheens, etc.), and the values of the field indicator parameters, if measured.

Step 5: Attach a new PDB sampler to the dedicated harness and reinstall in the monitoring well after sampling activities are complete (Optional: PDB samplers may be installed at a later date given that sampler installation is complete at least 2 weeks before sampling is scheduled). Close and lock the monitoring well.

Appendix B

# Field Sampling Logs

# Appendix B

# Field Sampling Logs

First Half 2011
Groundwater Monitoring
Passive Difusion Bag Specifications and Summary
Pfizer Inc.
Bound Brook Remediation Program

| Well I.D. | Well Depth (ft BTOC) | Screen Length (ft) | Number of PDBs Installed | Installation Height of Top of PDB Above Bottom of Well (ft) | Semi-annual Required | Deployment Date | WL Measured | Comment |
|---|---|---|---|---|---|---|---|---|
| Impoundment 1 & 2 | | | | | | | | |
| PZ-12-1 | 14.7 | 10 | 2 | 11.2, 6.2* | 1/2 | 4/7/2011 | 5.00 | 2 bags installed** |
| PZ-12-2 | 14.9 | 10 | 2 | 11.4, 6.4* | 1/2 | 4/7/2011 | 5.40 | 2 bags installed** |
| PZ-12-3 | 15.0 | 10 | 2 | 11.5, 6.5* | 1/2 | 4/7/2011 | 4.30 | 2 bags installed** |
| PZ-12-4 | 16.8 | 10 | 2 | 13.3, 8.3* | 1/2 | 4/7/2011 | 4.50 | 2 bags installed** |
| PZ-12-5 | 14.9 | 10 | 2 | 11.4, 6.4* | 1/2 | 4/7/2011 | 3.80 | 2 bags installed** |
| PZ-12-6 | 15.2 | 10 | 2 | 11.7, 6.7* | 1/2 | 4/7/2011 | 4.45 | 2 bags installed** |
| 01-MW-1 | 15.4 | NA | 2 | 11.9, 6.9* | 1/2 | 4/7/2011 | 6.05 | 2 bags installed** |
| 01-MW-2 | 18.1 | NA | 2 | 14.6, 9.6* | 1/2 | 4/7/2011 | 6.60 | 2 bags installed** |
| 01-MW-3 | 17.5 | NA | 2 | 14.0, 9.0* | 1/2 | 4/7/2011 | 3.60 | 2 bags installed** |
| FLOD-W1S | 17.4 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 7.50 | |
| FLOD-W2S | 12.4 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 6.25 | |
| Impoundment 3, 4, & 5 | | | | | | | | |
| 28R | 18.1 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 4.60 | |
| MW-2 | 21.4 | 15 | 2 | 3.8, 9.8 | 1/2 | 4/7/2011 | 8.20 | |
| Impoundment 14 | | | | | | | | |
| 19-R | 11.9 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 3.55 | |
| 21-R | 22.5 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 17.90 | |
| O-R | 17.4 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 5.20 | |
| Impoundment 15, 16, 17 & 18 | | | | | | | | |
| AAA | 16.8 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 5.00 | |
| CCC-R | 26.6 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 14.80 | 3 bags installed* |
| EEE-R | 25.1 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 13.40 | |
| III | 19.8 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 4.25 | |
| KKK | 28.3 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 13.85 | |
| Lagoon 6&7 / Impoundment 19&24 | | | | | | | | |
| 32R | 20.8 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 8.45 | |
| 34R | 27.7 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 16.65 | |
| 38R | 26.7 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 14.85 | |
| 42R | 24.3 | 5 | 1 | 3.5 | 1/2 | 4/7/2011 | 13.30 | |
| TFP-94-1R | 20.0 | 8 | 1 | 5 | 1/2 | 4/7/2011 | 5.80 | |
| Main Plant | | | | | | | | |
| MW-1A | 20.8 | 5 | 1 | 3.5 | 1/2 | NA | NA | Sampled on 4/30/11 via pumping |
| MW-22R | 27.7 | 5 | 1 | 3.5 | 1/2 | NA | NA | Sampled on 4/30/11 via pumping |

Notes:
ft BTOC - feet below top of casing
Water levels measured day of deployment of PDBs.
* - bags installed at the same depth for QC purposes
** - upper and lower screen portion
NA - Not Applicable. See comments

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: PZ-12-1
4. Well Permit Number: 25-56205

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1340
15. Depth to Ground Water — Depth to ground water at time of deployment 5.0 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 0800
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 4.13 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    ☒ **No**, this well is being profiled during this sampling round
    ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    ☐ **No**, flow testing has not been conducted in this well
    ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
    Type of flow meter used: ______
    Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 58°F Wind – ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: PZ-12-2
4. Well Permit Number: 25-56206

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 — Time: 1355
15. Depth to Ground Water — Depth to ground water at time of deployment 5.4 FT
16. Date and Time of Retrieval — Date: 5/18/11 — Time: 0859
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 4.93 FT retrieval
18. Type of Deployment Line Used — Diameter: 1/8" — Material: 140# SS Stranded Cable Coated with Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F — Wind light — ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 60°F — Wind drizzle — ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: PZ-12-3
4. Well Permit Number: 25-56207

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1430
15. Depth to Ground Water — Depth to ground water at time of deployment 4.30 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1335
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 3.60 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. Warm Wind LT breeze ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: PZ-12-4
4. Well Permit Number: 25-56208

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1405
15. Depth to Ground Water — Depth to ground water at time of deployment 4.50 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1043
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 4.57 FT retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 62°F Wind – ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: PZ-12-5
4. Well Permit Number: 25-56209

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1420
15. Depth to Ground Water — Depth to ground water at time of deployment 3.80 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1416
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 3.23 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No,** this well is being profiled during this sampling round
    - ☐ **Yes,** this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No,** flow testing has not been conducted in this well
    - ☐ **Yes,** flow testing of this well was conducted. Date of testing: ______
      - Type of flow meter used: ______
      - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 67°F Wind — ☐ Sunny ☐ Overcast ☒ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: PZ-12-6
4. Well Permit Number: 25-562010

14. Date and Time of Deployment — Date: 4/7/11 Time: 1415
15. Depth to Ground Water — Depth to ground water at time of deployment 4.45 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1327
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 4.07 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 70°F Wind – ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: 01-MW-1
4. Well Permit Number: N/A

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1510
15. Depth to Ground Water — Depth to ground water at time of deployment 6.05 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1040
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 5.33 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Ceble Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. warm Wind Lt. breeze ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: 01-MW-2
4. Well Permit Number: N/A

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1450
15. Depth to Ground Water — Depth to ground water at time of deployment 6.60 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1205
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 5.88 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No,** this well is being profiled during this sampling round
    - ☐ **Yes,** this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No,** flow testing has not been conducted in this well
    - ☐ **Yes,** flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. warm Wind still ☐ Sunny ☐ Overcast ☒ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: 01-MW-3
4. Well Permit Number: N/A

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1500
15. Depth to Ground Water — Depth to ground water at time of deployment 3.60 FT
16. Date and Time of Retrieval — Date: 5/18/11 Time: 1203
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 3.34 FT Retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☒ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ____________

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ____________
      Type of flow meter used: ____________
      Measurements taken every ____________ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 65°F Wind – ☐ Sunny ☐ Overcast ☒ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: FLOD-W1S
4. Well Permit Number: 25-00067731

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 — Time: 1520
15. Depth to Ground Water — Depth to ground water at time of deployment 7.50 FT
16. Date and Time of Retrieval — Date: 5/18/11 — Time: 0945
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 7.25 FT (Retrieval)
18. Type of Deployment Line Used — Diameter: 1/8" — Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______________

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______________
      Type of flow meter used: ______________
      Measurements taken every ______________ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50 F — Wind light — ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. warm — Wind Lt. Breeze — ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanmid
2. Location: Bound Brook, NJ
3. Well Designation: FLOD-W2S
4. Well Permit Number: 25-00067731

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1530
15. Depth to Ground Water — Depth to ground water at time of deployment 6.25 FT
16. Date and Time of Retrieval — Date: 5/19/11 Time: 1215
17. Depth to Ground Water — Depth to ground water at time of deployment 5.03 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS Stranded Cable Coated With Teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ________

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ________
      Type of flow meter used: ________
      Measurements taken every ________ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Slight ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. — Wind — ☐ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: TFP-94-1R
4. Well Permit Number: 25-49039

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1100
15. Depth to Ground Water — Depth to ground water at time of deployment 5.80 FT
16. Date and Time of Retrieval — Date: 4/27/11 Time: 1245
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 4.38 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ No, this well is being profiled during this sampling round
    - ☐ Yes, this well was profiled already. Date when well was profiled: ______
    - Note: One PDB is being used to monitor the 8 ft screen interval.

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ No, flow testing has not been conducted in this well
    - ☐ Yes, flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Slight ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. Warm Wind Light breeze ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 34-R
4. Well Permit Number: 25-33062-4

[illegible] (items 5–13; screen slot size 0.010 inch)

14. Date and Time of Deployment — Date: 4/7/11 — Time: 1110
15. Depth to Ground Water — Depth to ground water at time of deployment 16.65 FT
16. Date and Time of Retrieval — Date: 4/28/11 — Time: 1559
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 14.67 FT retrieval
18. Type of Deployment Line Used — Diameter: 1/8" — Material: 140# SS stranded cable with teflon

[illegible] (items 19–23)

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F — Wind light — ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. – — Wind – — ☐ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible] (item 28: field sampling technician names and company)

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 28-R
4. Well Permit Number: NA

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1030
15. Depth to Ground Water — Depth to ground water at time of deployment 4.60 FT
16. Date and Time of Retrieval — Date: 4/28/11 Time: 0905
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 3.59 FT retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140#SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 75°F Wind – ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 19-R
4. Well Permit Number: 25-31283-9

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1000
15. Depth to Ground Water — Depth to ground water at time of deployment 3.55 FT
16. Date and Time of Retrieval — Date: 4/28/11 Time: 1030
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 3.48 FT retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 50°F Wind – ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: MW-2
4. Well Permit Number: 25-33944-3

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1015
15. Depth to Ground Water — Depth to ground water at time of deployment 8.20 FT
16. Date and Time of Retrieval — Date: 4/28/11 Time: 1310
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 6.78 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable coated with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No,** this well is being profiled during this sampling round
    - ☐ **Yes,** this well was profiled already. Date when well was profiled: ______
    - Note: Two PDBs have been used for sampling the 15 ft screen interval
25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☒ **No,** flow testing has not been conducted in this well
    - ☐ **Yes,** flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**
26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 75°F Wind — ☐ Sunny ☐ Overcast ☒ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 42-R
4. Well Permit Number: 25-33066-7

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1135
15. Depth to Ground Water — Depth to ground water at time of deployment 13.30
16. Date and Time of Retrieval — Date: 4/30/11 Time: 1120
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 12.72
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. mild Wind Breezy ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: KKK
4. Well Permit Number: 25-25029-9

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1200
15. Depth to Ground Water — Depth to ground water at time of deployment 13.85
16. Date and Time of Retrieval — Date: 4/29/11 Time: 1250
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 12.83 retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 71°F Wind – ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 21-R
4. Well Permit Number: 25-31284-7

14. Date and Time of Deployment — Date: 4/7/11 Time: 1025
15. Depth to Ground Water — Depth to ground water at time of deployment 17.90
16. Date and Time of Retrieval — Date: 4/27/11 Time: 1525
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 17.63
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140#SS stranded cable with teflon

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
   - ☐ **No**, this well is being profiled during this sampling round
   - ☐ **Yes**, this well was profiled already. Date when well was profiled: ____________

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
   - ☐ **No**, flow testing has not been conducted in this well
   - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ____________
     Type of flow meter used: ____________
     Measurements taken every ____________ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. mild Wind Lt. breeze ☐ Sunny ☐ Overcast ☒ Raining ☐ Snowing

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: EEE-R
4. Well Permit Number: 25-31282-1

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1210
15. Depth to Ground Water — Depth to ground water at time of deployment 13.40
16. Date and Time of Retrieval — Date: 4/30/11 Time: 1010
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 11.80 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS strandêd cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      - Type of flow meter used: ______
      - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Slight ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 60°F Wind – ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: CCC-R
4. Well Permit Number: 25-50084

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1215
15. Depth to Ground Water — Depth to ground water at time of deployment 14.80
16. Date and Time of Retrieval — Date: 4/30/11 Time: 0835
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 14.14 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      Type of flow meter used: ______
      Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. ______ Wind ______ ☐ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 38-R
4. Well Permit Number: 25-33064-1

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1050
15. Depth to Ground Water — Depth to ground water at time of deployment 14.85
16. Date and Time of Retrieval — Date: 4/29/11 Time: 1440
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ 12.42 retrieval
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Slight ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 68°F Wind – ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection

## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: AAA
4. Well Permit Number: 25-24942-8

14. Date and Time of Deployment — Date: 4/7/11 Time: 1225
15. Depth to Ground Water — Depth to ground water at time of deployment 5.00
16. Date and Time of Retrieval — Date: 4/29/11 Time: 1030
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 4.13
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      - Type of flow meter used: ______
      - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 68°F Wind windy ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: III
4. Well Permit Number: 25-25027-2

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1235
15. Depth to Ground Water — Depth to ground water at time of deployment 4.25
16. Date and Time of Retrieval — Date: 4/29/11 Time: 1143
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 3.03 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind light ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. 70°F Wind – ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 32-R
4. Well Permit Number: 2533063-2

[illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 1115
15. Depth to Ground Water — Depth to ground water at time of deployment 8.45
16. Date and Time of Retrieval — Date: 5/13/11 Time: 1430
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 10.79 FT
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

[illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
      - Type of flow meter used: ______
      - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50°F Wind Slight ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. Warm Wind Still ☒ Sunny ☐ Overcast ☐ Raining ☐ Snowing

[illegible]

# New Jersey Department of Environmental Protection
## Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBS)

1. Site: Former American Cyanamid
2. Location: Bound Brook, NJ
3. Well Designation: 0 - R
4. Well Permit Number: 25-22855

5.–13. [illegible]

14. Date and Time of Deployment — Date: 4/7/11 Time: 0955
15. Depth to Ground Water — Depth to ground water at time of deployment 5.20
16. Date and Time of Retrieval — Date: 4/27/11 Time: 1540
17. Depth to Ground Water — Depth to ground water at time of ~~deployment~~ retrieval 4.12
18. Type of Deployment Line Used — Diameter: 1/8" Material: 140# SS stranded cable with teflon

19.–23. [illegible]

24. If the saturated portion of the well screen or open hole is greater than 5 feet, has the well been vertically profiled to assess the potential for contaminant stratification?
    - ☐ **No**, this well is being profiled during this sampling round
    - ☐ **Yes**, this well was profiled already. Date when well was profiled: ______

25. If the saturated portion of the well screen or open hole is greater than 10 feet, has the well been flow tested to assess the potential for vertical flow to be present within the well?
    - ☐ **No**, flow testing has not been conducted in this well
    - ☐ **Yes**, flow testing of this well was conducted. Date of testing: ______
    - Type of flow meter used: ______
    - Measurements taken every ______ feet **[Please Attach Results]**

26. Weather Conditions During Deployment — Temp. 50° Wind Slight ☐ Sunny ☒ Overcast ☐ Raining ☐ Snowing
27. Weather Conditions During Retrieval — Temp. – Wind Mild ☐ Sunny ☐ Overcast ☒ Raining ☐ Snowing

28. [illegible]

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** Well: *Flod W1S*  **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | 17.40 | ft. | **Case Size:** | 2.0 | inch |
| **DTWTOC:** | 7.25 | ft. | **vol/ft:** | 0.16 | gal/ft |
| **Water Length:** | 10.15 | ft. | **Case Vol:** | 1.62 | gal |
| **Vol x 3 =** | 4.86 | gal | **Vol x 5 =** | 8.10 | gal |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 5.06 | 69100.0 | 11.3 | 4.91 | CLEAR | 7.60 | 7.25 | 0.0 | 9:50 |
| A. | 3.28 | 2600.0 | 10.5 | 2.73 | CLEAR | 5.00 | | 2.0 | 9:55 |
| B. | 3.00 | 3200.0 | 9.9 | 2.88 | CLEAR | <0.1 | | 4.0 | 10:05 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 2.97 | 3720.0 | 9.9 | 2.14 | CLEAR | <0.1 | 7.52 | 6.0 | 10:05 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 8.00 | 10:10 |
| Post Sample | 2.91 | 3840.0 | 9.8 | 2.05 | CLEAR | <0.1 | 7.54 | 12.00 | 10:20 |

| | | | |
|---|---|---|---|
| **Purge End:** | 10:05 | **Pump:** | SOLINIST |
| **Purge Start:** | 9:50 | **Bailer:** | N/A |
| **Purge Length:** | 15.0 | **Bailer Seal:** | N/A |
| **Volume Purged:** | 6.00 gal | **Purge Rate:** | 0.40 GPM |

**Weather:** Overcast, Warm, Damp

**Sampling Technicians:** *HM*

**Comments:**

**ACCUTEST**

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *01-MW-3*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **17.50** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **3.37** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **14.13** | **ft.** | **Case Vol:** | **9.18** | **gal** |
| **Vol x 3 =** | **27.54** | **gal** | **Vol x 5 =** | **45.90** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 1.81 | 508.0 | 13.2 | 3.13 | CLEAR | 131.00 | 3.37 | 0.0 | 12:24 |
| **A.** | 1.72 | 599.0 | 12.8 | 9.16 | CLEAR | 42.60 | | 9.0 | 12:34 |
| **B.** | 1.63 | 723.0 | 12.8 | 2.62 | CLEAR | 16.70 | | 18.0 | 12:43 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 1.63 | 749.0 | 12.2 | 3.58 | CLEAR | 7.80 | 5.32 | 28.0 | 12:53 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 33.00 | 12:58 |
| **Post Sample** | 1.62 | 756.0 | 12.3 | 2.15 | CLEAR | 0.00 | 5.31 | 38.00 | 13:03 |

| | | | |
|---|---|---|---|
| **Purge End:** | **12:53** | **Pump:** | **SOLINIST** |
| **Purge Start:** | **12:24** | **Bailer:** | **N/A** |
| **Purge Length:** | **29.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **28.00 gal** | **Purge Rate:** | **0.97** GPM |

**Weather:** Cloudy, Occasional Rain, 67 Degrees F

**Sampling Technicians:** *SH*

**Comments:** ***Strong Odor***
***No Lock***

ACCUTEST

# Monitoring Well Field Sheet

Date: *5/18/2011*

Client: *Wyeth*

Well ID: **Well:** *01-MW-2*

Location: *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **18.10** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **5.88** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **12.22** | **ft.** | **Case Vol:** | **7.94** | **gal** |
| **Vol x 3 =** | **23.82** | **gal** | **Vol x 5 =** | **39.70** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 1.42 | 51900.0 | 12.2 | 2.05 | Lt Brwn | 117.00 | 5.88 | 0.0 | 12:28 |
| A. | 1.40 | 52000.0 | 11.1 | 1.48 | Lt Brwn | 68.90 | | 9.0 | 12:39 |
| B. | 1.37 | 52000.0 | 11.2 | 0.92 | Lt Brwn | 52.30 | | 19.0 | 12:52 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 1.41 | 47800.0 | 11.8 | 2.30 | CLEAR | 14.20 | 6.01 | 28.0 | 13:03 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 30.00 | 13:05 |
| Post Sample | 1.40 | 48600.0 | 11.2 | 2.15 | CLEAR | 17.70 | 5.99 | 33.50 | 13:10 |

| | | | |
|---|---|---|---|
| **Purge End:** | **13:03** | **Pump:** | **SOLINIST** |
| **Purge Start:** | **12:28** | **Bailer:** | **N/A** |
| **Purge Length:** | **35.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **28.00 gal** | **Purge Rate:** | **0.80** GPM |

**Weather:** Lt Rain, Overcast, Warm

**Sampling Technicians:** *HM*

**Comments:** ***Strong Odor to Purge and Sample.***
***FB [11:40] via bladder used on 01-MW-2. Need Tubing***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** Well: *01-MW-1*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **15.40** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **5.33** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **10.07** | **ft.** | **Case Vol:** | **6.55** | **gal** |
| **Vol x 3 =** | **19.65** | **gal** | **Vol x 5 =** | **32.75** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| **Pre-Purge** | 3.01 | 24900.0 | 12.2 | 5.31 | Drk Brwn | >500 | 5.33 | 0.0 | 10:45 |
| **A.** | 3.05 | 82400.0 | 11.1 | 1.52 | Lt Brwn | 375.00 | | 7.0 | 10:54 |
| **B.** | 2.94 | 80000.0 | 11.0 | 0.91 | Lt Brwn | 171.00 | | 14.0 | 11:02 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| **Post Purge** | 2.94 | 82700.0 | 11.1 | 0.81 | Lt Brwn | 118.00 | 6.33 | 21.0 | 11:11 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 24.00 | 11:15 |
| **Post Sample** | 2.88 | 81000.0 | 11.1 | <0.01 | Lt Brwn | 35.00 | 6.34 | 40.00 | 11:35 |

| | | | |
|---|---|---|---|
| **Purge End:** | **11:11** | **Pump:** | **SOLINIST** |
| **Purge Start:** | **10:45** | **Bailer:** | **N/A** |
| **Purge Length:** | **26.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **21.00** **gal** | **Purge Rate:** | **0.81** GPM |

**Weather:** overcast, warm, damp

**Sampling Technicians:** *HM*

**Comments:** ***Perform MS/MSD on 01-MW-1***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** Well: *PZ-12-6* **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **15.20** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **4.07** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **11.13** | **ft.** | **Case Vol:** | **1.78** | **gal** |
| **Vol x 3 =** | **5.34** | **gal** | **Vol x 5 =** | **8.90** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 3.36 | 45600.0 | 14.1 | 9.99 | CLEAR | 47.10 | 4.07 | 0.0 | 13:38 |
| A. | 3.77 | 31000.0 | 14.9 | 3.15 | CLEAR | 13.50 | 5.54 | 2.0 | 13:41 |
| B. | 4.20 | 30700.0 | 15.0 | 2.23 | CLEAR | 0.00 | 5.41 | 4.0 | 13:47 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 4.27 | 31100.0 | 15.1 | 2.20 | CLEAR | 0.00 | 5.42 | 6.0 | 13:51 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 7.38 | 13:54 |
| Post Sample | 4.29 | 30900.0 | 15.0 | 1.66 | CLEAR | 0.00 | 5.40 | 8.76 | 13:57 |

| | | | |
|---|---|---|---|
| **Purge End:** | **13:51** | **Pump:** | **SOLINIST** |
| **Purge Start:** | **13:38** | **Bailer:** | **N/A** |
| **Purge Length:** | **13.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **6.00** **gal** | **Purge Rate:** | **0.46** GPM |

**Weather:** CLOUDY, 70'S

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** Well: *PZ-12-5*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **14.90** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **3.10** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **11.80** | **ft.** | **Case Vol:** | **1.89** | **gal** |
| **Vol x 3 =** | **5.67** | **gal** | **Vol x 5 =** | **9.45** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 6.01 | 38100.0 | 13.3 | 1.76 | CLEAR | 75.10 | 3.10 | 0.0 | 14:32 |
| A. | 6.11 | 37700.0 | 14.8 | 1.44 | CLEAR | 39.50 | 6.01 | 2.0 | 14:37 |
| B. | 6.14 | 36400.0 | 15.3 | 1.86 | CLEAR | 53.50 | 6.02 | 4.0 | 14:42 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 6.13 | 35700.0 | 15.5 | 3.97 | CLEAR | 49.20 | 6.28 | 6.0 | 14:47 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 8.40 | 14:53 |
| Post Sample | 6.08 | 35700.0 | 15.5 | 2.13 | CLEAR | 39.90 | 6.40 | 9.20 | 14:55 |

| | | | |
|---|---|---|---|
| **Purge End:** | **14:47** | **Pump:** | **SOLINIST** |
| **Purge Start:** | **14:32** | **Bailer:** | **N/A** |
| **Purge Length:** | **15.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **6.00 gal** | **Purge Rate:** | **0.40** GPM |

**Weather:** HEAVY RAIN, 67 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *PZ-12-4*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **16.80** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **4.58** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **12.22** | **ft.** | **Case Vol:** | **1.96** | **gal** |
| **Vol x 3 =** | **5.88** | **gal** | **Vol x 5 =** | **9.80** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 2.94 | 127.0 | 13.3 | 1.76 | CLOUDY | -5.00 | 4.58 | 0.0 | 11:03 |
| **A.** | 2.60 | 164.0 | 12.7 | 1.44 | CLOUDY | 617.00 | 5.20 | 2.0 | 11:08 |
| **B.** | 2.49 | 185.0 | 12.6 | 1.86 | CLOUDY | 530.00 | 5.20 | 4.0 | 11:14 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 2.42 | 202.0 | 12.5 | 1.36 | CLOUDY | 538.00 | 5.21 | 6.0 | 11:19 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 7.90 | 11:24 |
| **Post Sample** | 2.40 | 210.0 | 12.6 | 1.05 | CLOUDY | 434.00 | 5.20 | 8.66 | 11:26 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **11:19** | | **Pump:** | **SOLINIST** |
| **Purge Start:** | **11:03** | | **Bailer:** | **N/A** |
| **Purge Length:** | **16.0** | | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **6.00** | **gal** | **Purge Rate:** | **0.38** GPM |

**Weather:** CLOUDY,63 DEGREES F

**Sampling Technicians:** *SH*

**Comments:** ***NO LOCK***
***HEAVY FILM / SCREEN NOTED / STRONG ODOR***

**ACCUTEST**

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** Well: *PZ-12-3*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **15.00** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **3.62** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **11.38** | **ft.** | **Case Vol:** | **1.82** | **gal** |
| **Vol x 3 =** | **5.46** | **gal** | **Vol x 5 =** | **9.10** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 3.72 | 17600.0 | 13.0 | 2.82 | BRWN | 228.00 | 3.62 | 0.0 | 13:50 |
| **A.** | 4.45 | 13800.0 | 13.0 | 2.22 | CLEAR | 8.50 | | 2.5 | 13:55 |
| **B.** | 4.84 | 12700.0 | 13.3 | 2.27 | CLEAR | 4.70 | | 5.0 | 14:00 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 4.89 | 12600.0 | 13.2 | 2.67 | CLEAR | 1.30 | 3.94 | 7.5 | 14:05 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 10.00 | 14:10 |
| **Post Sample** | 4.51 | 12600.0 | 13.2 | 2.51 | CLEAR | 1.10 | 3.88 | 12.50 | 14:20 |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **14:05** | | **Pump:** | **SOLINIST** |
| **Purge Start:** | **13:50** | | **Bailer:** | **N/A** |
| **Purge Length:** | **15.0** | | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **7.50** | **gal** | **Purge Rate:** | **0.50** GPM |

**Weather:**

**Sampling Technicians:** *HM*

**Comments:** ***FIELD DUP ON PZ-12-3***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *5/18/2011*

**Client:** *Wyeth*

**Well ID:** Well: *PZ-12-2*  **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **14.90** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **4.96** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **9.94** | **ft.** | **Case Vol:** | **1.59** | **gal** |
| **Vol x 3 =** | **4.77** | **gal** | **Vol x 5 =** | **7.95** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 5.40 | 17000.0 | 12.8 | 3.90 | CLOUDY | 316.00 | 4.96 | 0.0 | 9:34 |
| A. | 5.51 | 13300.0 | 13.0 | 4.74 | CLEAR | 71.80 | 5.31 | 1.6 | 9:39 |
| B. | 5.40 | 14400.0 | 13.0 | 4.08 | CLEAR | 41.00 | 5.30 | 3.2 | 9:43 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 5.23 | 18300.0 | 13.0 | 3.40 | CLEAR | 12.00 | 5.30 | 5.0 | 9:48 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 6.80 | 9:53 |
| Post Sample | 5.15 | 22300.0 | 12.9 | 3.01 | CLEAR | 6.80 | 5.33 | 7.88 | 9:56 |

| | | | |
|---|---|---|---|
| **Purge End:** | **9:48** | **Pump:** | **SOLINIST** |
| **Purge Start:** | **9:34** | **Bailer:** | **N/A** |
| **Purge Length:** | **14.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **5.00** **gal** | **Purge Rate:** | **0.36** GPM |

**Weather:** CLOUDY, DRIZZLE, 60'S

**Sampling Technicians:** *SH*

**Comments:** ***NO LOCK***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** 5/18/2011

**Client:** Wyeth

**Well ID:** Well: PZ-12-1

**Location:** A.H.P. Bound Brook

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | 14.70 | ft. | **Case Size:** | 2.0 | inch |
| **DTWTOC:** | 4.13 | ft. | **vol/ft:** | 0.16 | gal/ft |
| **Water Length:** | 10.57 | ft. | **Case Vol:** | 1.69 | gal |
| **Vol x 3 =** | 5.07 | gal | **Vol x 5 =** | 8.45 | gal |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 3.36 | 56200.0 | 15.2 | 3.09 | CLOUDY | 568.00 | 4.13 | 0.0 | 8:18 |
| A. | 3.43 | 25100.0 | 15.3 | 2.99 | CLEAR | 27.10 | 4.83 | 1.8 | 8:21 |
| B. | 3.32 | 25600.0 | 15.2 | 2.63 | CLEAR | 0.00 | 4.87 | 3.6 | 8:24 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 3.28 | 25500.0 | 15.3 | 2.38 | CLEAR | 0.00 | 4.89 | 5.2 | 8:29 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 6.14 | 8:31 |
| Post Sample | 3.30 | 26200.0 | 15.2 | 2.46 | CLEAR | 0.00 | 4.94 | 8.49 | 8:36 |

| | | | |
|---|---|---|---|
| **Purge End:** | 8:29 | **Pump:** | SOLINIST |
| **Purge Start:** | 8:18 | **Bailer:** | N/A |
| **Purge Length:** | 11.0 | **Bailer Seal:** | N/A |
| **Volume Purged:** | 5.20 gal | **Purge Rate:** | 0.47 GPM |

**Weather:** CLOUDY, 60'S

**Sampling Technicians:** SH

**Comments:** NO LOCK

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/30/2011*

**Client:** *Wyeth*

**Well ID:** Well: *MW-22R*

**Location:** *A.H.P. BOUNDBROOK*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **22.95** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **8.28** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **14.67** | **ft.** | **Case Vol:** | **2.35** | **gal** |
| **Vol x 3 =** | **7.05** | **gal** | **Vol x 5 =** | **11.75** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** SUBMERSIBLE

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 8.61 | 782.0 | 11.9 | 1.93 | BROWN | >500 | 8.28 | 0.0 | 10:02 |
| A. | 8.69 | 728.0 | 11.8 | 1.27 | BROWN | >500 | | 2.4 | 10:12 |
| B. | 8.75 | 721.0 | 11.9 | 0.36 | BROWN | >500 | | 5.0 | 10:24 |
| C. | 8.77 | 710.0 | 11.8 | 0.40 | BROWN | 386.00 | | 7.5 | 10:35 |
| D. | 8.70 | 716.0 | 11.6 | 0.51 | BROWN | 234.00 | | 9.9 | 10:45 |
| | | | | | | | | | |
| Post Purge | 8.77 | 718.0 | 11.8 | 0.38 | BROWN | 176.00 | 8.53 | 11.3 | 10:51 |
| Pre-Sample | 8.76 | 718.0 | 11.8 | 2.17 | BROWN | 59.30 | 8.32 | | 11:00 |
| Sample | | | | | | | | 11.30 | 11:05 |
| Post Sample | 8.75 | 716.0 | 11.8 | 2.09 | BROWN | 129.00 | 8.41 | 11.30 | 11:10 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **10:51** | | **Pump:** | **SOLINST** |
| **Purge Start:** | **10:02** | | **Bailer:** | **Dispo** |
| **Purge Length:** | **49.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **11.3** | **gal** | **Purge Rate:** | **0.23** GPM |

**Weather:** CLEAR, COOL, BREEZE

**Sampling Technicians:** *HM*

**Comments:**

*r.7-5-11*

MC
MC

**ACCUTEST**

# Monitoring Well Field Sheet

**Date:** *4/30/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** ***MW-1A*** **Location:** ***A.H.P. BOUNDBROOK***

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **14.42** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **12.44** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **1.98** | **ft.** | **Case Vol:** | **1.29** | **gal** |
| **Vol x 3 =** | **3.87** | **gal** | **Vol x 5 =** | **6.45** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** SUBMERSIBLE

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 8.92 | 2680.0 | 12.4 | 1.03 | BLACK | 299.00 | 12.44 | 0.0 | 8:35 |
| A. | 9.07 | 2670.0 | 12.6 | 1.42 | BLACK | 182.00 | | 1.2 | 8:41 |
| B. | 9.21 | 2700.0 | 12.6 | 1.72 | BLACK | 69.80 | | 2.4 | 8:42 |
| C. | 9.33 | 2660.0 | 12.6 | 0.71 | CLEAR | 28.80 | | 3.6 | 8:53 |
| D. | 9.29 | 2660.0 | 12.5 | 0.83 | CLEAR | 19.70 | | 4.8 | 8:59 |
| | | | | | | | | | |
| Post Purge | 9.24 | 2650.0 | 12.4 | 0.69 | CLEAR | 16.20 | 12.70 | 6.0 | 9:05 |
| Pre-Sample | 9.28 | 2640.0 | 12.4 | 0.41 | CLEAR | 12.70 | 12.46 | | 9:15 |
| Sample | | | | | | | | 6.00 | 9:20 |
| Post Sample | 9.23 | 2610.0 | 12.4 | 0.37 | CLEAR | 15.60 | 12.62 | 6.00 | 9:25 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **9:05** | | **Pump:** | **SOLINST** |
| **Purge Start:** | **8:35** | | **Bailer:** | **Dispo** |
| **Purge Length:** | **30.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **6.0** | **gal** | **Purge Rate:** | **0.20** GPM |

**Weather:** CLEAR, COOL, BREEZE

**Sampling Technicians:** *HM*

**Comments:** ***WELL HAS NOT BEEN SAMPLED FOR YEARS. EVACUATED APP 5 VOLUMES***

MC
MC

**Date:** *4/30/2011*

**Client:** *Wyeth*

# Monitoring Well Field Sheet

**Well ID:** Well: *42R*

**Location:** *A.H.P. BOUNDBROOK*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **24.20** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **12.72** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **11.48** | **ft.** | **Case Vol:** | **7.46** | **gal** |
| **Vol x 3 =** | **22.38** | **gal** | **Vol x 5 =** | **37.30** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 8.35 | 882.0 | 13.8 | 1.38 | CLEAR | 46.10 | 12.72 | 0.0 | 11:30 |
| **A.** | 8.70 | 884.0 | 13.8 | 0.65 | CLEAR | 57.20 | | 8.0 | 11:40 |
| **B.** | 8.89 | 885.0 | 13.8 | 0.48 | CLEAR | 47.80 | | 16.0 | 11:50 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 8.92 | 890.0 | 13.8 | 0.52 | CLEAR | 48.10 | 17.32 | 24.0 | 12:00 |
| **Pre-Sample** | " | " | " | " | " | " | " | " | " |
| **Sample** | | | | | CLEAR | | | 28.00 | 12:05 |
| **Post Sample** | 8.85 | 894.0 | 13.7 | 0.75 | CLEAR | 39.60 | 17.35 | 30.00 | 12:10 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **12:00** | | **Pump:** | **SOLINST** |
| **Purge Start:** | **11:30** | | **Bailer:** | **N/A** |
| **Purge Length:** | **30.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **24.0** | **gal** | **Purge Rate:** | **0.80** GPM |

**Weather:** CLEAR, MILD BREEZE

**Sampling Technicians:** *HM*

**Comments:**

MC
MC

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/30/2011*

**Client:** *Wyeth*

**Well ID:** Well: *EEE-R*

**Location:** *A.H.P. BOUNDBROOK*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **25.10** | **ft.** | | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **11.80** | **ft.** | | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **13.30** | **ft.** | | **Case Vol:** | **8.65** | **gal** |
| **Vol x 3 =** | **25.95** | **gal** | | **Vol x 5 =** | **43.25** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 6.66 | 636.0 | 12.5 | 2.24 | CLEAR | 46.80 | 11.80 | 0.0 | 10:35 |
| **A.** | 6.66 | 641.0 | 11.5 | 1.56 | CLEAR | 44.85 | | 10.0 | 10:53 |
| **B.** | 6.61 | 637.0 | 11.6 | 1.60 | CLEAR | 34.80 | | 20.0 | 11:11 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 6.65 | 635.0 | 11.3 | 1.46 | CLEAR | 6.45 | 12.20 | 30.0 | 11:29 |
| **Pre-Sample** | " | " | " | " | " | " | " | " | " |
| **Sample** | | | | | CLEAR | | | 33.60 | 11:35 |
| **Post Sample** | 6.66 | 643.0 | 11.0 | 1.71 | CLEAR | 7.36 | 12.20 | 40.88 | 11:48 |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **11:29** | | **Pump:** | **SOLINST** | |
| **Purge Start:** | **10:35** | | **Bailer:** | **N/A** | |
| **Purge Length:** | **54.0** | **min** | **Bailer Seal:** | **N/A** | |
| **Volume Purged:** | **30.0** | **gal** | **Purge Rate:** | **0.56** | GPM |

**Weather:** SUNNY, COOL, 60'S

**Sampling Technicians:** *RS*

**Comments:** ***MS, MSD***

MC
MC

ACCUTEST®

# Monitoring Well Field Sheet

Date: *4/30/2011*

Client: *Wyeth*

Well ID: Well: *CCC-R*

Location: *A.H.P. BOUNDBROOK*

| | | | | | |
|---|---|---|---|---|---|
| Well Depth: | 26.50 | ft. | Case Size: | 4.0 | inch |
| DTWTOC: | 14.10 | ft. | vol/ft: | 0.65 | gal/ft |
| Water Length: | 12.40 | ft. | Case Vol: | 8.06 | gal |
| Vol x 3 = | 24.18 | gal | Vol x 5 = | 40.30 | gal |

## **** Purge Monitoring ****

Purge Method: PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 6.37 | 658.0 | 11.8 | 2.68 | CLEAR | 34.20 | 14.10 | 0.0 | 8:54 |
| A. | 6.33 | 898.0 | 11.4 | 1.98 | CLEAR | 34.50 | | 10.0 | 9:12 |
| B. | 6.32 | 910.0 | 11.4 | 2.07 | CLEAR | 30.30 | | 20.0 | 9:21 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 6.34 | 911.0 | 11.4 | 2.23 | CLEAR | 33.60 | 14.73 | 30.0 | 9:30 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | CLEAR | | | 34.03 | 9:35 |
| Post Sample | 6.32 | 853.0 | 11.2 | 2.10 | CLEAR | 36.20 | 14.54 | 45.65 | 9:49 |

| | | | | |
|---|---|---|---|---|
| Purge End: | 9:30 | | Pump: | SOLINST |
| Purge Start: | 8:54 | | Bailer: | N/A |
| Purge Length: | 36.0 | min | Bailer Seal: | N/A |
| Volume Purged: | 30.0 | gal | Purge Rate: | 0.83 GPM |

Weather: SUNNY, COLD, 50'S

Sampling Technicians: *RS*

Comments: *FIELD DUP ON CCC-R (EXCEPT VO'S)*

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/29/2011*

**Client:** *Wyeth*

**Well ID:** Well: *38R*

**Location:** *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **25.60** | **ft.** | | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **12.46** | **ft.** | | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **13.14** | **ft.** | | **Case Vol:** | **8.54** | **gal** |
| **Vol x 3 =** | **25.62** | **gal** | | **Vol x 5 =** | **42.71** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 8.41 | 880.0 | 13.9 | 2.08 | ORANGE | 640.00 | 12.46 | 0.0 | 15:52 |
| A. | 8.95 | 788.0 | 13.4 | 1.52 | CLOUDY | 220.00 | 14.05 | 9.0 | 16:04 |
| B. | 9.39 | 560.0 | 13.4 | 2.52 | CLEAR | 70.30 | 14.04 | 18.0 | 16:16 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 9.43 | 470.0 | 13.5 | 2.11 | CLEAR | 18.30 | 14.08 | 27.0 | 16:28 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 28.00 | 16:30 |
| Post Sample | 9.55 | 448.0 | 13.4 | 1.80 | CLEAR | 13.60 | 14.09 | 29.00 | 16:32 |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **16:28** | | **Pump:** | **SOLNIST 410** | |
| **Purge Start:** | **15:52** | | **Bailer:** | **N/A** | |
| **Purge Length:** | **36.0** | **min** | **Bailer Seal:** | **N/A** | |
| **Volume Purged:** | **27.0** | **gal** | **Purge Rate:** | **0.75** | GPM |

**Weather:** CLOUDY, 66 DEGREES F

**Sampling Technicians:** *STAN HUTT*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/29/2011*

**Client:** *Wyeth*

**Well ID:** Well: *AAA GRP11* **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **16.80** | **ft.** | **Case Size:** | **1.5** | **inch** |
| **DTWTOC:** | **4.12** | **ft.** | **vol/ft:** | **0.09** | **gal/ft** |
| **Water Length:** | **12.68** | **ft.** | **Case Vol:** | **1.14** | **gal** |
| **Vol x 3 =** | **3.42** | **gal** | **Vol x 5 =** | **5.71** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 9.09 | 453.0 | 13.2 | 1.47 | CLOUDY | 904.00 | 4.12 | 0.0 | 10:52 |
| A. | 10.58 | 795.0 | 12.3 | 1.71 | CLEAR | 118.00 | 4.78 | 1.1 | 10:55 |
| B. | 10.73 | 811.0 | 11.9 | 1.40 | CLEAR | 32.90 | 4.65 | 2.2 | 10:58 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 10.72 | 815.0 | 12.1 | 1.79 | CLEAR | 24.10 | 4.62 | 3.8 | 11:01 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 4.40 | 11:03 |
| Post Sample | 10.76 | 819.0 | 12.0 | 1.17 | CLEAR | 16.00 | 4.61 | 5.40 | 11:05 |

| | | | |
|---|---|---|---|
| **Purge End:** | **11:01** | **Pump:** | **SOLNIST 410** |
| **Purge Start:** | **10:52** | **Bailer:** | **N/A** |
| **Purge Length:** | **9 MIN** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **3.80 gal** | **Purge Rate:** | **0.42** GPM |

**Weather:** PARTLY SUNNY, 71 DEGREES F

**Sampling Technicians:** *STAN HUTT*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/29/2011*

**Client:** *Wyeth*

**Well ID:** Well: *111 GRP11* **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **19.80** | **ft.** | **Case Size:** | **1.5** | **inch** |
| **DTWTOC:** | **3.02** | **ft.** | **vol/ft:** | **0.09** | **gal/ft** |
| **Water Length:** | **16.78** | **ft.** | **Case Vol:** | **1.51** | **gal** |
| **Vol x 3 =** | **4.53** | **gal** | **Vol x 5 =** | **7.55** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 9.39 | 601.0 | 12.3 | 1.02 | MUDDY | -5.00 | 3.02 | 0.0 | 12:00 |
| A. | 9.47 | 601.0 | 11.5 | 1.62 | CLEAR | 54.80 | 3.22 | 1.5 | 12:07 |
| B. | 9.52 | 605.0 | 11.0 | 2.25 | CLEAR | 36.20 | 3.27 | 3.0 | 12:13 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 9.55 | 605.0 | 10.9 | 2.26 | CLEAR | 21.40 | 3.25 | 4.5 | 12:19 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 5.50 | 12:21 |
| Post Sample | 9.57 | 605.0 | 10.8 | 1.44 | CLEAR | 20.80 | 3.25 | 6.50 | 12:23 |

| | | | |
|---|---|---|---|
| **Purge End:** | **12:19** | **Pump:** | **SOLNIST 410** |
| **Purge Start:** | **12:00** | **Bailer:** | **N/A** |
| **Purge Length:** | **19 MIN** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **4.50** gal | **Purge Rate:** | **0.24** GPM |

**Weather:** PARTLY SUNNY, 70 DEGREES F

**Sampling Technicians:** *STAN HUTT*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/29/2011*

**Client:** *Wyeth*

**Well ID:** Well: *KKK GRP11* **Location:** *A.H.P. Bound Brook*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Well Depth:** | **28.30** | **ft.** | | **Case Size:** | **1.5** | **inch** |
| **DTWTOC:** | **12.85** | **ft.** | | **vol/ft:** | **0.09** | **gal/ft** |
| **Water Length:** | **15.45** | **ft.** | | **Case Vol:** | **1.39** | **gal** |
| **Vol x 3 =** | **4.17** | **gal** | | **Vol x 5 =** | **6.95** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| **Pre-Purge** | 6.48 | 219.0 | 13.1 | 1.59 | CLOUDY | 537.00 | 12.85 | 0.0 | 13:40 |
| **A.** | 6.11 | 194.0 | 12.1 | 1.31 | CLEAR | 50.80 | 13.08 | 1.4 | 13:45 |
| **B.** | 6.13 | 188.0 | 11.8 | 1.29 | CLEAR | 23.90 | 13.07 | 2.8 | 13:50 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| **Post Purge** | 6.30 | 186.0 | 11.5 | 2.24 | CLEAR | 22.80 | 13.07 | 4.2 | 13:56 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 5.20 | 14:00 |
| **Post Sample** | 6.37 | 185.0 | 11.6 | 1.90 | CLEAR | 13.60 | 13.05 | 6.20 | 14:04 |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **13:56** | | **Pump:** | **SOLNIST 410** |
| **Purge Start:** | **13:40** | | **Bailer:** | **N/A** |
| **Purge Length:** | **16 MIN** | | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **4.20** | **gal** | **Purge Rate:** | **0.26** GPM |

**Weather:** PARTLY SUNNY, 70 DEGREES F

**Sampling Technicians:** *STAN HUTT*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/29/2011*

**Client:** *Wyeth*

**Well ID:** Well: *16MW-2GRP11*   **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | 16.10 | ft. | **Case Size:** | 4.0 | inch |
| **DTWTOC:** | 4.25 | ft. | **vol/ft:** | 0.65 | gal/ft |
| **Water Length:** | 11.85 | ft. | **Case Vol:** | 7.70 | gal |
| **Vol x 3 =** | 23.10 | gal | **Vol x 5 =** | 38.50 | gal |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 10.38 | 814.0 | 14.0 | 1.95 | ORANGE | 351.00 | 4.25 | 0.0 | 9:00 |
| A. | 10.63 | 795.0 | 13.4 | 3.23 | CLOUDY | 177.00 | 4.35 | 8.0 | 9:13 |
| B. | 10.59 | 799.0 | 13.8 | 2.95 | CLEAR | 97.00 | 4.32 | 16.0 | 9:28 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 10.72 | 799.0 | 14.0 | 3.74 | CLEAR | 67.00 | 4.31 | 24.0 | 9:45 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 25.00 | 9:48 |
| Post Sample | 10.67 | 793.0 | 13.1 | 3.73 | CLEAR | 38.80 | 4.31 | 26.00 | 9:51 |

| | | | |
|---|---|---|---|
| **Purge End:** | 9:45 | **Pump:** | SOLINIST |
| **Purge Start:** | 9:00 | **Bailer:** | N/A |
| **Purge Length:** | 45 MIN | **Bailer Seal:** | N/A |
| **Volume Purged:** | 24.00 gal | **Purge Rate:** | 0.53 GPM |

**Weather:** SUNNY, BREEZY, 64 DEGREES F

**Sampling Technicians:** *STAN HUTT*

**Comments:**

*r.7-5-11*

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** Well: *34R*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **26.30** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **14.70** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **11.60** | **ft.** | **Case Vol:** | **7.54** | **gal** |
| **Vol x 3 =** | **22.62** | **gal** | **Vol x 5 =** | **37.70** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| **Pre-Purge** | 7.85 | 806.0 | 14.1 | 2.30 | BLACK | 195.00 | 19.70 | 0.0 | 16:20 |
| **A.** | 7.31 | 768.0 | 14.7 | 2.79 | CLEAR | 47.20 | 17.50 | 10.0 | 16:43 |
| **B.** | 7.19 | 777.0 | 15.0 | 2.62 | CLEAR | 28.00 | 17.57 | 20.0 | 17:09 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| **Post Purge** | 7.10 | 776.0 | 15.0 | 2.65 | CLEAR | 17.20 | 17.55 | 25.0 | 17:23 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 25.40 | 17:24 |
| **Post Sample** | 7.04 | 772.0 | 14.0 | 2.62 | CLEAR | 18.30 | 17.55 | 27.40 | 17:29 |

| | | | |
|---|---|---|---|
| **Purge End:** | **17:23** | **Pump:** | **SOLINST** |
| **Purge Start:** | **16:20** | **Bailer:** | **N/A** |
| **Purge Length:** | **63.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **25.00** **gal** | **Purge Rate:** | **0.40** GPM |

**Weather:** CLOUDY, COOL, 70'S

**Sampling Technicians:** *RS* SH

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *28R*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **17.80** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **3.59** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **14.21** | **ft.** | **Case Vol:** | **9.24** | **gal** |
| **Vol x 3 =** | **27.72** | **gal** | **Vol x 5 =** | **46.20** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 7.01 | 1180.0 | 14.4 | 2.03 | BRWN | 636.00 | 3.59 | 0.0 | 9:19 |
| **A.** | 6.26 | 1070.0 | 13.8 | 1.26 | CLEAR | 104.00 | | 10.0 | 9:33 |
| **B.** | 6.09 | 970.0 | 14.3 | 1.98 | CLEAR | 58.10 | | 20.0 | 9:47 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 6.07 | 952.0 | 14.8 | 2.18 | CLEAR | 32.30 | 4.49 | 30.0 | 10:01 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 30.71 | 10:02 |
| **Post Sample** | 6.00 | 967.0 | 14.6 | 2.57 | CLEAR | 42.60 | 4.40 | 32.84 | 10:05 |
| | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Purge End:** | **10:01** | **Pump:** | **SOLINST** |
| **Purge Start:** | **9:19** | **Bailer:** | **N/A** |
| **Purge Length:** | **42.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **30.00** **gal** | **Purge Rate:** | **0.71** GPM |

**Weather:** CLOUDY, HOT, 75 DEGREES F

**Sampling Technicians:** *RS*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *19R*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **11.60** | **ft.** | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **3.55** | **ft.** | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **8.05** | **ft.** | **Case Vol:** | **5.23** | **gal** |
| **Vol x 3 =** | **15.69** | **gal** | **Vol x 5 =** | **26.15** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 6.75 | 318.0 | 13.8 | 1.53 | BRWN | 186.00 | 3.55 | 0.0 | 10:45 |
| A. | 6.72 | 261.0 | 14.6 | 1.34 | Lt. Brwn | 172.00 | | 5.0 | 10:55 |
| B. | 6.68 | 251.0 | 14.5 | 2.44 | Lt. Brwn | 281.00 | | 10.0 | 11:03 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 6.49 | 248.0 | 14.4 | 3.32 | Lt. Brwn | 356.00 | 10.95 | 16.0 | 11:14 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 16.55 | 11:15 |
| Post Sample | 6.49 | 249.0 | 14.3 | 3.53 | Lt. Brwn | 350.00 | 11.15 | 19.30 | 11:20 |

| | | | |
|---|---|---|---|
| **Purge End:** | **11:14** | **Pump:** | **SOLINST** |
| **Purge Start:** | **10:45** | **Bailer:** | **N/A** |
| **Purge Length:** | **29.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **16.00** **gal** | **Purge Rate:** | **0.55** GPM |

**Weather:** CLOUDY, HOT, 80'S

**Sampling Technicians:** *RS*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** Well: *MW-2*

**Location:** *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **21.10** | **ft.** | | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **6.84** | **ft.** | | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **14.26** | **ft.** | | **Case Vol:** | **9.27** | **gal** |
| **Vol x 3 =** | **27.81** | **gal** | | **Vol x 5 =** | **46.35** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALTIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 8.14 | 3090.0 | 13.1 | 0.94 | GREEN | 109.00 | 6.84 | 0.0 | 13:36 |
| **A.** | 8.60 | 3140.0 | 13.3 | 1.64 | GREEN | 204.00 | | 10.0 | 14:05 |
| **B.** | 8.64 | 3230.0 | 13.6 | 2.30 | GREEN | 230.00 | | 20.0 | 14:55 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 8.71 | 3210.0 | 14.4 | 2.68 | GREEN | 146.00 | 16.16 | 30.0 | 15:20 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | | 15:22 |
| **Post Sample** | 8.68 | 3220.0 | 13.7 | 3.71 | GREEN | 124.00 | 15.69 | 30.00 | 15:25 |

| | | | |
|---|---|---|---|
| **Purge End:** | **15:20** | **Pump:** | **SOLINST** |
| **Purge Start:** | **13:36** | **Bailer:** | **N/A** |
| **Purge Length:** | **104.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **30.00** **gal** | **Purge Rate:** | **0.29** GPM |

**Weather:** RAIN, HOT, 75 DEGRESS F

**Sampling Technicians:** *RS*

**Comments:** ***ONLY UPPER ZONE VOC SAMPLE. WELL HAD A LOT OF GARGAGE INSIDE.***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-10* **Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **72.40** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **35.06** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **37.34** | **ft.** | **Case Vol:** | **54.89** | **gal** |
| **Vol x 3 =** | **164.67** | **gal** | **Vol x 5 =** | **274.45** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 5.28 | 478.0 | 15.9 | 5.03 | CLEAR | 16.60 | 35.06 | 0.0 | 8:05 |
| A. | 6.41 | 477.0 | 15.0 | 4.07 | CLEAR | 0.00 | 40.08 | 55.0 | 9:00 |
| B. | 6.70 | 461.0 | 15.0 | 3.57 | CLEAR | 0.00 | 40.50 | 110.0 | 9:55 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 6.15 | 463.0 | 15.6 | 3.63 | CLEAR | 13.10 | 39.70 | 165.0 | 10:50 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 170.00 | 10:55 |
| Post Sample | 6.40 | 469.0 | 15.8 | 3.69 | CLEAR | 10.50 | 39.85 | 175.00 | 11:00 |

| | | | |
|---|---|---|---|
| **Purge End:** | **10:50** | **Pump:** | **DEDICATED** |
| **Purge Start:** | **8:05** | **Bailer:** | **N/A** |
| **Purge Length:** | **165.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **165.00** **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** CLOUDY, 70 DEGREES F

**Sampling Technicians:** *SH*

**Comments:** ***MS, MSD***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-9*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **87.70** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **23.59** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **64.11** | **ft.** | **Case Vol:** | **94.24** | **gal** |
| **Vol x 3 =** | **282.72** | **gal** | **Vol x 5 =** | **471.20** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 5.87 | 550.0 | 14.6 | 6.59 | CLEAR | 1.20 | 23.59 | 0.0 | 8:25 |
| **A.** | 8.61 | 566.0 | 16.0 | 1.35 | CLEAR | 5.60 | 40.09 | 94.0 | 9:59 |
| **B.** | 8.31 | 577.0 | 15.5 | 2.62 | CLEAR | 2.10 | 40.40 | 188.0 | 11:33 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 8.30 | 583.0 | 14.8 | 3.44 | CLEAR | 2.00 | 40.35 | 283.0 | 13:08 |
| **Pre-Sample** | " | " | " | " | | " | " | " | " |
| **Sample** | | | | | | | | 288.00 | 13:13 |
| **Post Sample** | 8.34 | 580.0 | 14.9 | 3.85 | CLEAR | 1.40 | 40.46 | 293.00 | 13:18 |
| | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Purge End:** | **13:08** | **Pump:** | **DEDICATED** |
| **Purge Start:** | **8:25** | **Bailer:** | **N/A** |
| **Purge Length:** | **283.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **283.00** **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** CLOUDY, 70 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-8*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **62.90** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **29.41** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **33.49** | **ft.** | **Case Vol:** | **49.23** | **gal** |
| **Vol x 3 =** | **147.69** | **gal** | **Vol x 5 =** | **246.15** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 8.07 | 380.0 | 15.5 | 2.77 | CLEAR | 11.00 | 29.41 | 0.0 | 8:50 |
| A. | 7.69 | 521.0 | 15.6 | 1.92 | CLEAR | 7.80 | 30.62 | 50.0 | 9:40 |
| B. | 6.86 | 526.0 | 16.0 | 2.14 | CLEAR | 1.90 | 30.30 | 100.0 | 10:30 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 7.68 | 537.0 | 16.0 | 2.01 | CLEAR | 4.20 | 30.51 | 150.0 | 11:20 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 155.00 | 11:25 |
| Post Sample | 7.30 | 510.0 | 16.0 | 2.09 | CLEAR | 2.50 | 30.60 | 160.00 | 11:30 |
| | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Purge End:** | **11:20** | **Pump:** | **DEDICATED** |
| **Purge Start:** | **8:50** | **Bailer:** | **N/A** |
| **Purge Length:** | **150.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **150.00 gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** CLOUDY, 70 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/28/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-1*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **71.70** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **35.96** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **35.74** | **ft.** | **Case Vol:** | **52.54** | **gal** |
| **Vol x 3 =** | **157.62** | **gal** | **Vol x 5 =** | **262.70** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 5.60 | 562.0 | 15.8 | 7.20 | CLEAR | 11.20 | 35.96 | 0.0 | 12:20 |
| A. | 7.12 | 653.0 | 14.8 | 2.84 | CLEAR | 11.10 | 36.32 | 60.0 | 13:20 |
| B. | 6.46 | 663.0 | 14.7 | 2.88 | CLEAR | 1.60 | 36.38 | 120.0 | 14:20 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 6.07 | 677.0 | 15.5 | 2.60 | CLEAR | 3.60 | 36.40 | 180.0 | 15:20 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 185.00 | 15:25 |
| Post Sample | 6.14 | 676.0 | 15.4 | 2.46 | CLEAR | 1.10 | 36.28 | 190.00 | 15:30 |

| | | | |
|---|---|---|---|
| **Purge End:** | **15:20** | **Pump:** | **DEDICATED** |
| **Purge Start:** | **12:20** | **Bailer:** | **N/A** |
| **Purge Length:** | **180.0** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **180.00** **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** HEAVY THUNDERSTORM, 67 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

# Wyeth Holding Corp
# Monitoring Well Field Sheet

**Date:** 4/27/2011

**Sampler:** *Harold Meissner*

**Flute ID:** TT

**Notes:**

Purge Pressure 110 PSI

Sample Pressure: 75 PSI

Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| **Port 1** | **Port 2** | **Port 3** | **Port 3** |
|---|---|---|---|
| Purge Vol Req 3.0 | Purge Vol Req 3.0 | Purge Vol Req 3.4 | Purge Vol Req |
| **Purge 1** | **Purge 1** | **Purge 1** | **Purge 4** |
| Time Start: 7:45 | Time Start: 7:45 | Time Start: 7:45 | Time Start: 11:30 |
| Time End: 7:40 | Time End: 7:40 | Time End: 7:40 | Time End: 11:32 |
| Volume: 1.50 | Volume: 1.50 | Volume: 1.50 | Volume: 0.25 |
| Color: *Clear* | Color: *Clear* | Color: *Clear* | Color: *Clear* |
| **Purge 2** | **Purge 2** | **Purge 2** | **Purge 5** |
| Time Start: 7:55 | Time Start: 7:55 | Time Start: 8:00 | Time Start: 13:55 |
| Time End: 8:00 | Time End: 8:00 | Time End: 8:02 | Time End: 13:57 |
| Volume: 1.50 | Volume: 1.50 | Volume: 0.25 | Volume: 0.50 |
| Color: *Clear* | Color: *Clear* | Color: *Clear* | Color: *Clear* |
| **Purge 3** | **Purge 3** | **Purge 3** | **Purge 6** |
| Time Start: | Time Start: 10:25 | Time Start: 11:05 | Time Start: 14:40 |
| Time End: | Time End: 10:30 | Time End: 11:08 | Time End: 14:42 |
| Volume: | Volume: 1.00 | Volume: 0.75 | Volume: 0.25 |
| Color: | Color: *Clear* | Color: *Clear* | Color: *Clear* |
| Total Volume 3.00 | Total Volume 3.00 | Continued | Total Volume 3.50 |
| **Sample** | **Sample** | **Sample** | **Sample** |
| Time Start: 10:35 | Time Start: 10:45 | Time Start: 10:39 | Time Start: 16:05 |

Weather: *S-Clear, Warm light breeze*

Comments:

*Field Blank [11:30]*

## Wyeth Holding Corp
## Monitoring Well Field Sheet

**Date:** 4/27/2011

**Sampler:** *Harold Meissner*

**Flute ID:** WW

**Notes:**

Purge Pressure 110 PSI

Sample Pressure: 75 PSI

Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| | **Port 1** | **Port 2** | **Port 3** | **Port 4** |
|---|---|---|---|---|
| Purge Vol Req | 4.2 | 4.3 | 4.2 | |
| **Purge 1** | | | | |
| Time Start: | 9:45 | 9:45 | 9:45 | |
| Time End: | 9:53 | 9:53 | 9:53 | |
| Volume: | 2.25 | 2.00 | 2.25 | |
| Color: | *Clear* | *Clear* | *lt BrTint* | |
| **Purge 2** | | | | |
| Time Start: | 10:10 | 10:10 | 10:10 | |
| Time End: | 10:18 | 10:18 | 10:18 | |
| Volume: | 2.25 | 2.00 | 2.25 | |
| Color: | *Clear* | *Clear* | *Clear* | |
| **Purge 3** | | | | |
| Time Start: | | 10:25 | | |
| Time End: | | 10:30 | | |
| Volume: | | 1.00 | | |
| Color: | | *Clear* | | |
| Total Volume | 4.50 | 5.00 | 4.50 | |
| **Sample** | | | | |
| Time Start: | 10:35 | 10:45 | 10:39 | |

Weather: *S-Clear, Warm light breeze*

Comments:

# Wyeth Holding Corp
# Monitoring Well Field Sheet

**Date:** 4/27/2011

**Sampler:** *Harold Meissner*

**Flute ID:** XX

**Notes:**

Purge Pressure 110 PSI

Sample Pressure: 75 PSI

Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| **Port 1** | **Port 2** | **Port 3** 4/26/2011 | **Port 4** |
|---|---|---|---|
| Purge Vol Req | Purge Vol Req | Purge Vol Req N/A | Purge Vol Req |
| **Purge 1** | **Purge 1** | **Purge 1** 4/26/2011 | **Purge 1** |
| Time Start: | Time Start: | Time Start: 8:10 | Time Start: |
| Time End: | Time End: | Time End: 8:18 | Time End: |
| Volume: | Volume: | Volume: 2.25 | Volume: |
| Color: | Color: | Color: *Clear* | Color: |
| **Purge 2** | **Purge 2** | **Purge 2** 4/26/2011 | **Purge 2** |
| Time Start: | Time Start: | Time Start: 16:20 | Time Start: |
| Time End: | Time End: | Time End: 16:28 | Time End: |
| Volume: | Volume: | Volume: 2.25 | Volume: |
| Color: | Color: | Color: *Clear* | Color: |
| **Purge 3** | **Purge 3** | **Purge 3** | **Purge 3** |
| Time Start: | Time Start: | Time Start: | Time Start: |
| Time End: | Time End: | Time End: | Time End: |
| Volume: | Volume: | Volume: | Volume: |
| Color: | Color: | Color: | Color: |
| Total Volume | Total Volume | Total Volume 4.50 | Total Volume |
| **Sample** | **Sample** | 4/27/2011 **Sample** | **Sample** |
| Time Start: | Time Start: | Time Start: 8:45 | Time Start: |

Weather: *S-Clear, Mild, Slight breeze*

Comments:

*XX P3 purged on 4-26, and sampled in Morning of 4-27-11*

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/27/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *TFP941R*

**Location:** *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **19.10** | **ft.** | | **Case Size:** | **4.0** | **inch** |
| **DTWTOC:** | **4.38** | **ft.** | | **vol/ft:** | **0.65** | **gal/ft** |
| **Water Length:** | **14.72** | **ft.** | | **Case Vol:** | **9.57** | **gal** |
| **Vol x 3 =** | **28.71** | **gal** | | **Vol x 5 =** | **47.85** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** CENTRIFUGAL

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 7.51 | 940.0 | 17.3 | 3.42 | Lt. Brown | 35.12 | 4.38 | 0.0 | 12:50 |
| A. | 8.04 | 980.0 | 16.3 | 4.04 | CLEAR | 18.30 | | 11.0 | 13:04 |
| B. | 8.50 | 1010.0 | 14.5 | 4.47 | CLEAR | 10.90 | | 22.0 | 13:07 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 9.25 | 1020.0 | 14.6 | 4.25 | CLEAR | 10.40 | 4.65 | 32.0 | 13:30 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 36.00 | 13:35 |
| Post Sample | 9.19 | 1030.0 | 14.2 | 3.98 | CLEAR | 11.90 | 4.69 | 40.00 | 13:40 |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **13:30** | | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **12:50** | | | **Bailer:** | **N/A** |
| **Purge Length:** | **40.0** | **min** | | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **32.0** | **gal** | | **Purge Rate:** | **0.80** GPM |

**Weather:** clear, warm, Lt. Breeze

**Sampling Technicians:** *HM*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/27/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-15*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **83.90** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **39.28** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **44.62** | **ft.** | **Case Vol:** | **65.59** | **gal** |
| **Vol x 3 =** | **196.77** | **gal** | **Vol x 5 =** | **327.95** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 6.13 | 570.0 | 15.7 | 6.18 | CLEAR | 16.70 | 39.28 | 0.0 | 12:05 |
| A. | 6.09 | 584.0 | 15.0 | 4.15 | CLEAR | 7.90 | 39.80 | 65.0 | 13:10 |
| B. | 6.65 | 572.0 | 15.1 | 4.35 | CLEAR | 12.30 | 39.91 | 130.0 | 14:15 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 6.50 | 557.0 | 15.3 | 4.18 | CLEAR | 4.00 | 39.65 | 197.0 | 15:22 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 202.00 | 15:27 |
| Post Sample | 6.33 | 553.0 | 15.4 | 4.09 | CLEAR | 1.70 | 39.80 | 207.00 | 15:32 |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **15:22** | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **12:05** | | **Bailer:** | **N/A** |
| **Purge Length:** | **197.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **197.0** | **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** CLOUDY, 74 DEGREES F

**Sampling Technicians:** *SH*

**Comments:** ***FIELD DUP***

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/27/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-14*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | 80.50 | ft. | **Case Size:** | 6.0 | inch |
| **DTWTOC:** | 39.96 | ft. | **vol/ft:** | 1.47 | gal/ft |
| **Water Length:** | 40.54 | ft. | **Case Vol:** | 59.59 | gal |
| **Vol x 3 =** | 178.77 | gal | **Vol x 5 =** | 297.95 | gal |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 6.21 | 537.0 | 15.4 | 6.85 | CLEAR | 10.80 | 39.96 | 0.0 | 12:55 |
| A. | 7.03 | 578.0 | 15.6 | 3.31 | CLEAR | 33.40 | 40.28 | 60.0 | 13:55 |
| B. | 6.69 | 537.0 | 15.2 | 3.96 | CLEAR | 24.40 | 40.45 | 120.0 | 14:55 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 6.53 | 534.0 | 15.0 | 3.80 | CLEAR | 5.50 | 40.41 | 180.0 | 15:55 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 185.00 | 16:00 |
| Post Sample | 6.57 | 527.0 | 14.7 | 3.99 | CLEAR | 4.30 | 40.40 | 190.00 | 16:05 |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | 15:55 | | **Pump:** | DEDICATED | |
| **Purge Start:** | 12:55 | | **Bailer:** | N/A | |
| **Purge Length:** | 180.0 | min | **Bailer Seal:** | N/A | |
| **Volume Purged:** | 180.0 | gal | **Purge Rate:** | 1.00 | GPM |

**Weather:** CLOUDY, HUMID 73 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/27/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-13*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **85.90** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **43.60** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **42.30** | **ft.** | **Case Vol:** | **62.18** | **gal** |
| **Vol x 3 =** | **186.54** | **gal** | **Vol x 5 =** | **310.90** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 6.94 | 634.0 | 16.2 | 2.90 | CLEAR | 15.00 | 43.60 | 0.0 | 7:45 |
| A. | 6.99 | 611.0 | 14.9 | 2.21 | CLEAR | 3.40 | 47.89 | 62.0 | 8:47 |
| B. | 7.46 | 591.0 | 15.7 | 2.22 | CLEAR | 12.20 | 47.95 | 124.0 | 9:49 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 8.14 | 593.0 | 16.1 | 2.02 | CLEAR | 1.60 | 47.84 | 187.0 | 10:52 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 191.00 | 10:56 |
| Post Sample | 7.62 | 588.0 | 15.2 | 1.87 | CLEAR | 0.20 | 47.78 | 196.00 | 11:01 |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **10:52** | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **7:45** | | **Bailer:** | **N/A** |
| **Purge Length:** | **187.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **187.0** | **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** PARTLY CLOUDY, 67 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/27/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-12*

**Location:** *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **77.10** | **ft.** | | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **42.97** | **ft.** | | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **34.13** | **ft.** | | **Case Vol:** | **50.17** | **gal** |
| **Vol x 3 =** | **150.51** | **gal** | | **Vol x 5 =** | **250.85** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 7.81 | 1050.0 | 15.5 | 2.07 | CLEAR | 1.60 | 42.97 | 0.0 | 8:05 |
| A. | 8.65 | 999.0 | 15.0 | 2.24 | CLEAR | 3.70 | 44.68 | 50.0 | 8:55 |
| B. | 8.37 | 920.0 | 15.7 | 2.56 | CLEAR | 20.30 | 44.80 | 100.0 | 9:45 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 8.17 | 940.0 | 15.4 | 218.00 | CLEAR | 17.40 | 44.95 | 151.0 | 10:36 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 155.00 | 10:40 |
| Post Sample | 8.28 | 950.0 | 16.2 | 2.38 | CLEAR | 12.40 | 44.81 | 160.00 | 10:45 |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **10:36** | | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **8:05** | | | **Bailer:** | **N/A** |
| **Purge Length:** | **151.0** | **min** | | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **151.0** | **gal** | | **Purge Rate:** | **1.00** GPM |

**Weather:** MOSTLY CLOUDY, 67 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/27/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-11*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **89.80** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **42.32** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **47.48** | **ft.** | **Case Vol:** | **69.80** | **gal** |
| **Vol x 3 =** | **209.40** | **gal** | **Vol x 5 =** | **349.00** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 7.13 | 680.0 | 15.8 | 3.22 | CLEAR | 1.50 | 42.32 | 0.0 | 8:40 |
| A. | 6.65 | 657.0 | 15.2 | 4.04 | CLEAR | 8.90 | 43.85 | 75.0 | 9:55 |
| B. | 7.21 | 673.0 | 15.0 | 4.05 | CLEAR | 2.50 | 43.90 | 145.0 | 11:05 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 6.63 | 685.0 | 15.5 | 4.07 | CLEAR | 10.10 | 43.71 | 215.0 | 12:15 |
| Pre-Sample | " | " | " | " | | " | " | " | " |
| Sample | | | | | | | | 220.00 | 12:20 |
| Post Sample | 6.60 | 684.0 | 15.3 | 3.99 | CLEAR | 1.20 | 43.80 | 225.00 | 12:25 |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **12:15** | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **8:40** | | **Bailer:** | **N/A** |
| **Purge Length:** | **215.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **215.0** | **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** MOSTLY CLOUDY, 68 DEGREES F

**Sampling Technicians:** *SH*

**Comments:**

**Wyeth Holding Corp**
**Monitoring Well Field Sheet**

**Date:** 4/26/2011

**Sampler:** *Harold Meissner*

**Flute ID:** YY

**Notes:**
Purge Pressure 110 PSI
Sample Pressure: 75 PSI
Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| | **Port 1** | **Port 2** | **Port 3** | **Port 4** |
|---|---|---|---|---|
| Purge Vol Req | 4.5 | 4.3 | 4.3 | |
| **Purge 1** | | | | |
| Time Start: | 14:03 | 14:03 | 14:03 | |
| Time End: | 14:12 | 14:12 | 14:12 | |
| Volume: | 2.00 | 2.25 | 2.25 | |
| Color: | *lt brown* | *Clear* | *Clear* | |
| **Purge 2** | | | | |
| Time Start: | 14:28 | 14:28 | 14:28 | |
| Time End: | 14:37 | 14:37 | 14:37 | |
| Volume: | 2.00 | 2.25 | 2.25 | |
| Color: | *ltbrown* | *Clear* | *Clear* | |
| **Purge 3** | | | | |
| Time Start: | 14:47 | | 10:00 | |
| Time End: | 14:51 | | 10:03 | |
| Volume: | 1.00 | | 1.00 | |
| Color: | | | *Clear* | |
| Total Volume | 5.00 | 4.50 | 4.50 | |
| **Sample** | | | | |
| Time Start: | 15:18 | 14:58 | 15:08 | |

Weather: *Clear, Warm, l Breezy*
Comments: *MS / MSD performed on YY P2+B17*

## Wyeth Holding Corp
## Monitoring Well Field Sheet

**Date:** 4/26/2011

**Sampler:** *Harold Meissner*

**Flute ID:** XX

**Notes:**

Purge Pressure 110 PSI

Sample Pressure: 75 PSI

Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| | **Port 1** | **Port 2** | **Port 3** | **Port 4** |
|---|---|---|---|---|
| Purge Vol Req | 4.2 | 3.9 | N/A | |
| **Purge 1** | | | | |
| Time Start: | 8:10 | 8:10 | 8:10 | |
| Time End: | 8:17 | 8:17 | 8:18 | |
| Volume: | 2.25 | 2.25 | 2.25 | |
| Color: | *Clear* | *Clear* | *Clear* | |
| **Purge 2** | | | | |
| Time Start: | 8:33 | 8:33 | 16:20 | |
| Time End: | 8:40 | 8:40 | 16:28 | |
| Volume: | 2.25 | 2.25 | 2.25 | |
| Color: | *Clear* | *Clear* | *Clear* | |
| **Purge 3** | | | | |
| Time Start: | | | | |
| Time End: | | | | |
| Volume: | | | | |
| Color: | | | | |
| Total Volume | 4.50 | 4.50 | 4.50 | |
| **Sample** | | | | |
| Time Start: | 9:00 | 9:05 | A:M<br>27-Apr-11 | |

Weather: *Clear, Warm, l light breeze*

Comments:

*XX P3 to be saples in Morning of 4-27-11+B18*

# Wyeth Holding Corp
# Monitoring Well Field Sheet

**Date:** 4/26/2011

**Sampler:** *Harold Meissner*

**Flute ID:** SS

**Notes:**

Purge Pressure 110 PSI

Sample Pressure: 75 PSI

Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| **Port 1** | **Port 2** | **Port 3** | **Port 4** |
|---|---|---|---|
| Purge Vol Req 4.2 | Purge Vol Req 4.2 | Purge Vol Req 4.6 | Purge Vol Req |
| **Purge 1** | **Purge 1** | **Purge 1** | **Purge 1** |
| Time Start: 9:23 | Time Start: 9:23 | Time Start: 9:23 | Time Start: |
| Time End: 9:33 | Time End: 9:33 | Time End: 9:33 | Time End: |
| Volume: 2.25 | Volume: 2.25 | Volume: 2.25 | Volume: |
| Color: *Clear* | Color: *Clear* | Color: *Clear* | Color: |
| **Purge 2** | **Purge 2** | **Purge 2** | **Purge 2** |
| Time Start: 9:50 | Time Start: 9:50 | Time Start: 9:50 | Time Start: |
| Time End: 9:59 | Time End: 9:59 | Time End: 9:59 | Time End: |
| Volume: 2.25 | Volume: 2.25 | Volume: 2.25 | Volume: |
| Color: *Clear* | Color: *Clear* | Color: *Clear* | Color: |
| **Purge 3** | **Purge 3** | **Purge 3** | **Purge 3** |
| Time Start: | Time Start: | Time Start: 10:00 | Time Start: |
| Time End: | Time End: | Time End: 10:03 | Time End: |
| Volume: | Volume: | Volume: 1.00 | Volume: |
| Color: | Color: | Color: *Clear* | Color: |
| Total Volume 4.50 | Total Volume 4.50 | Total Volume 5.50 | Total Volume |
| **Sample** | **Sample** | **Sample** | **Sample** |
| Time Start: 10:15 | Time Start: 10:20 | Time Start: 10:30 | Time Start: |

Weather: *Clear, Warm, l Still.*

Comments: *Field Duplicate performed on SS P1*

*Inside Case appears to be Artesian.*

**Wyeth Holding Corp**
**Monitoring Well Field Sheet**

**Date:** 4/26/2011

**Sampler:** *Harold Meissner*

**Flute ID:** ZZ

**Notes:**
Purge Pressure 110 PSI
Sample Pressure: 75 PSI
Max Pressure: 125 PSI

Discard Initial Gallon @ Sample Collection

| | **Port 1** | **Port 2** | **Port 3** | **Port 4** |
|---|---|---|---|---|
| Purge Vol Req | 5.1 | 5.1 | 5.4 | 5.3 |
| **Purge 1** | | | | |
| Time Start: | 11:25 | 11:25 | 11:25 | 11:25 |
| Time End: | 11:36 | 11:36 | 11:37 | 11:36 |
| Volume: | 2.25 | 2.50 | 2.50 | 2.50 |
| Color: | *Clear* | *Clear* | *Clear* | *Clear* |
| **Purge 2** | | | | |
| Time Start: | 11:56 | 11:56 | 11:42 | 11:42 |
| Time End: | 12:07 | 12:07 | 11:54 | 11:54 |
| Volume: | 2.25 | 2.50 | 2.50 | 2.50 |
| Color: | *Clear* | *Clear* | *Clear* | *Clear* |
| **Purge 3** | | | | |
| Time Start: | 12:17 | 12:17 | 12:05 | 12:05 |
| Time End: | 12:22 | 12:22 | 12:10 | 12:10 |
| Volume: | 1.00 | 1.00 | 1.00 | 1.00 |
| Color: | *Clear* | *Clear* | *Clear* | *Clear* |
| Total Volume | 5.50 | 6.00 | 6.00 | 6.00 |
| **Sample** | | | | |
| Time Start: | 12:45 | 12:47 | 12:25 | 12:30 |

Weather: *Clear, Warm, light breeze.*
Comments: *Filed Blank [12:15]*
*Delayed by landscaper cutting grass in area.*

r. 7-5-11

ACCUTEST

# Monitoring Well Field Sheet

**Date:** 4/26/2011

**Client:** Wyeth

**Well ID:** Well: PW-3

**Location:** A.H.P. Bound Brook

**Well Depth:** ft.

**Case Size:** inch

**DTWTOC:** ft.

**vol/ft:** gal/ft

**Water Length:** ft.

**Case Vol:** gal

**Vol x 3 =** gal

**Vol x 5 =** gal

## **** Purge Monitoring ****

**Purge Method:**

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | OFF | | | | | | N/A | 0.0 | |
| A. | | | | | | | | | |
| B. | | | | | | | | | |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | | | | | | | | | |
| Pre-Sample | | | | | | | | | |
| Sample | 9.65 | 2370.0 | 14.8 | 5.28 | CLEAR | 13.80 | N/A | N/A | 13:15 |
| Post Sample | | | | | | | | | |

**Purge End:**

**Pump:**

**Purge Start:**

**Bailer:** N/A

**Purge Length:**

**Bailer Seal:** N/A

**Volume Purged:** gal

**Purge Rate:** GPM

**Weather:**

**Sampling Technicians:** HM

**Comments:** PUMP COULD NOT BE SHUTDOWN. NO WATER TABLE MEASUREMENT AVAILABLE

ACCUTEST

# Monitoring Well Field Sheet

Date: *4/26/2011*

Client: *Wyeth*

Well ID: **Well:** *PW-2*

Location: *A.H.P. Bound Brook*

Well Depth: ft.

Case Size: inch

DTWTOC: ft.

vol/ft: gal/ft

Water Length: ft.

Case Vol: gal

Vol x 3 = gal

Vol x 5 = gal

## **** Purge Monitoring ****

Purge Method:

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | OFF | | | | | | 78.79 | | 13:10 |
| A. | | | | | | | | | |
| B. | | | | | | | | | |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | | | | | | | | | |
| Pre-Sample | | | | | | | | | |
| Sample | | | | | | | | | |
| Post Sample | | | | | | | | | |

Purge End:

Purge Start:

Purge Length:

Volume Purged: gal

Pump:

Bailer: N/A

Bailer Seal: N/A

Purge Rate: GPM

Weather:

Sampling Technicians: *HM*

ACCUTEST

# Monitoring Well Field Sheet

Date: *4/26/2011*

Client: *Wyeth*

Well ID: **Well:** *RCRA D-7*

Location: *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **66.20** | **ft.** | | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **26.71** | **ft.** | | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **39.49** | **ft.** | | **Case Vol:** | **58.05** | **gal** |
| **Vol x 3 =** | **174.15** | **gal** | | **Vol x 5 =** | **290.25** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| **Pre-Purge** | 6.38 | 1360.0 | 15.0 | 2.12 | CLEAR | 36.60 | 26.71 | 0.0 | 7:45 |
| **A.** | 6.62 | 1320.0 | 15.7 | 2.06 | CLEAR | 9.20 | 29.17 | 58.0 | 8:43 |
| **B.** | 6.41 | 1350.0 | 16.0 | 2.15 | CLEAR | 6.00 | 29.22 | 116.0 | 9:41 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| **Post Purge** | 6.61 | 1390.0 | 16.2 | 1.99 | CLEAR | 0.00 | 29.23 | 175.0 | 10:40 |
| **Pre-Sample** | " | " | " | " | " | " | " | " | " |
| **Sample** | | | | | | | | 179.00 | 10:44 |
| **Post Sample** | 6.64 | 1380.0 | 16.0 | 1.68 | CLEAR | 1.10 | 29.28 | 184.00 | 10:49 |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **10:40** | | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **7:45** | | | **Bailer:** | **N/A** |
| **Purge Length:** | **175.0** | **min** | | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **175.0** | **gal** | | **Purge Rate:** | **1.00** GPM |

**Weather:** PARTIAL SUN, 63 DEGREES F

**Sampling Technicians:** *SH*

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/26/2011*

**Client:** *Wyeth*

**Well ID:** Well: *RCRA D-6*

**Location:** *A.H.P. Bound Brook*

**Well Depth:** 58.70 ft.

**Case Size:** 6.0 inch

**DTWTOC:** 28.47 ft.

**vol/ft:** 1.47 gal/ft

**Water Length:** 30.23 ft.

**Case Vol:** 44.44 gal

**Vol x 3 =** 133.32 gal

**Vol x 5 =** 222.20 gal

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 6.12 | 1620.0 | 14.4 | 3.20 | CLEAR | 2.50 | 28.47 | 0.0 | 8:15 |
| A. | 6.76 | 1720.0 | 15.6 | 3.13 | CLEAR | 0.00 | 31.16 | 44.0 | 8:59 |
| B. | 7.07 | 1700.0 | 15.1 | 3.09 | CLEAR | 0.00 | 31.25 | 88.0 | 9:43 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 6.62 | 1670.0 | 15.8 | 1.74 | CLEAR | 9.90 | 31.88 | 134.0 | 10:29 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 138.00 | 10:33 |
| Post Sample | 6.81 | 1660.0 | 16.0 | 1.32 | CLEAR | 1.40 | 31.10 | 143.00 | 10:38 |
| | | | | | | | | | |

**Purge End:** 10:29

**Pump:** DEDICATED

**Purge Start:** 8:15

**Bailer:** N/A

**Purge Length:** 134.0 min

**Bailer Seal:** N/A

**Volume Purged:** 134.0 gal

**Purge Rate:** 1.00 GPM

**Weather:** MOSTLY SUNNY, 65 DEGREES F

**Sampling Technicians:** *SH*

ACCUTEST

# Monitoring Well Field Sheet

Date: 4/26/2011

Client: *Wyeth*

Well ID: **Well:** *RCRA D-5*

Location: *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **59.30** | **ft.** | | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **32.13** | **ft.** | | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **27.17** | **ft.** | | **Case Vol:** | **39.94** | **gal** |
| **Vol x 3 =** | **119.82** | **gal** | | **Vol x 5 =** | **199.70** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 7.25 | 910.0 | 15.4 | 2.86 | CLEAR | 47.60 | 32.13 | 0.0 | 9:20 |
| A. | 6.97 | 940.0 | 15.5 | 2.80 | CLEAR | 0.00 | 33.55 | 40.0 | 10:00 |
| B. | 7.05 | 970.0 | 15.7 | 2.05 | CLEAR | 0.00 | 33.65 | 95.0 | 10:55 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 7.03 | 970.0 | 15.5 | 1.82 | CLEAR | 0.00 | 33.60 | 120.0 | 11:20 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 125.00 | 11:25 |
| Post Sample | 7.04 | 960.0 | 15.9 | 1.76 | CLEAR | 0.50 | 33.68 | 130.00 | 11:30 |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **11:20** | | **Pump:** | **DEDICATED** | |
| **Purge Start:** | **9:20** | | **Bailer:** | **N/A** | |
| **Purge Length:** | **120.0** | **min** | **Bailer Seal:** | **N/A** | |
| **Volume Purged:** | **120.0** | **gal** | **Purge Rate:** | **1.00** | GPM |

**Weather:** SUNNY, 71 DEGREES F

**Sampling Technicians:** *SH*

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/26/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *RCRA D-4*

**Location:** *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **83.80** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **32.54** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **51.26** | **ft.** | **Case Vol:** | **75.35** | **gal** |
| **Vol x 3 =** | **226.05** | **gal** | **Vol x 5 =** | **376.75** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 6.85 | 936.0 | 15.5 | 4.90 | CLEAR | 2.30 | 32.54 | 0.0 | 12:05 |
| **A.** | 6.54 | 921.0 | 15.8 | 2.98 | CLEAR | 0.00 | 33.35 | 75.0 | 13:20 |
| **B.** | 6.74 | 919.0 | 15.5 | 3.10 | CLEAR | 0.00 | 33.36 | 150.0 | 14:35 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 6.74 | 945.0 | 15.3 | 2.97 | CLEAR | 0.00 | 33.22 | 227.0 | 15:52 |
| **Pre-Sample** | " | " | " | " | " | " | " | " | " |
| **Sample** | | | | | | | | 231.00 | 15:56 |
| **Post Sample** | 6.76 | 926.0 | 15.0 | 2.45 | CLEAR | 0.00 | 33.31 | 236.00 | 16:01 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **15:52** | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **12:05** | | **Bailer:** | **N/A** |
| **Purge Length:** | **227.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **227.0** | **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** SUNNY, 77 DEGREES F

**Sampling Technicians:** *SH*

ACCUTEST

# Monitoring Well Field Sheet

**Date:** *4/26/2011*

**Client:** *Wyeth*

**Well ID:** **Well:** *RCRA D-3*

**Location:** *A.H.P. Bound Brook*

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Depth:** | **75.70** | **ft.** | | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **32.93** | **ft.** | | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **42.77** | **ft.** | | **Case Vol:** | **62.87** | **gal** |
| **Vol x 3 =** | **188.61** | **gal** | | **Vol x 5 =** | **314.35** | **gal** |

## **** Purge Monitoring ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| Pre-Purge | 7.07 | 999.0 | 15.4 | 7.11 | CLEAR | 0.00 | 32.93 | 0.0 | 12:25 |
| A. | 6.51 | 950.0 | 15.6 | 1.75 | CLEAR | 0.00 | 33.38 | 63.0 | 13:28 |
| B. | 6.90 | 940.0 | 16.2 | 0.85 | CLEAR | 10.60 | 33.30 | 126.0 | 14:31 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| | | | | | | | | | |
| Post Purge | 6.70 | 950.0 | 15.8 | 2.20 | CLEAR | 0.00 | 33.40 | 189.0 | 15:34 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 194.00 | 15:39 |
| Post Sample | 6.61 | 960.0 | 15.2 | 1.76 | CLEAR | 0.00 | 33.32 | 199.00 | 15:44 |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Purge End:** | **15:34** | | **Pump:** | **DEDICATED** | |
| **Purge Start:** | **12:25** | | **Bailer:** | **N/A** | |
| **Purge Length:** | **189.0** | **min** | **Bailer Seal:** | **N/A** | |
| **Volume Purged:** | **189.0** | **gal** | **Purge Rate:** | **1.00** | GPM |

**Weather:** SUNNY, 79 DEGREES F

**Sampling Technicians:** *SH*

ACCUTEST

# Monitoring Well Field Sheet

Date: *4/26/2011*

Client: *Wyeth*

Well ID: **Well:** *RCRA D-2*

Location: *A.H.P. Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **81.40** | **ft.** | **Case Size:** | **6.0** | **inch** |
| **DTWTOC:** | **34.37** | **ft.** | **vol/ft:** | **1.47** | **gal/ft** |
| **Water Length:** | **47.03** | **ft.** | **Case Vol:** | **69.13** | **gal** |
| **Vol x 3 =** | **207.39** | **gal** | **Vol x 5 =** | **345.65** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** BLADDER

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 6.79 | 999.0 | 15.7 | 2.77 | CLEAR | 0.00 | 34.37 | 0.0 | 12:45 |
| **A.** | 6.70 | 900.0 | 15.9 | 2.23 | CLEAR | 0.00 | 34.56 | 69.0 | 13:54 |
| **B.** | 6.65 | 900.0 | 16.3 | 2.03 | CLEAR | 0.50 | 34.57 | 138.0 | 15:03 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 6.88 | 900.0 | 15.3 | 2.57 | CLEAR | 0.00 | 34.42 | 208.0 | 16:13 |
| **Pre-Sample** | " | " | " | " | " | " | " | " | " |
| **Sample** | | | | | | | | 212.00 | 16:17 |
| **Post Sample** | 6.91 | 900.0 | 15.2 | 1.80 | CLEAR | 1.20 | 34.45 | 217.00 | 16:22 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **16:13** | | **Pump:** | **DEDICATED** |
| **Purge Start:** | **12:45** | | **Bailer:** | **N/A** |
| **Purge Length:** | **207.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **208.0** | **gal** | **Purge Rate:** | **1.00** GPM |

**Weather:** SUNNY, 82 DEGREES F

**Sampling Technicians:** *SH*

ACCUTEST®

# Monitoring Well Field Sheet

**Date:** *5/19/2011*

**Client:** *Wyeth*

**Well ID:** Well: *F10D-W2S*

**Location:** *A.H.P.Bound Brook*

**Well Depth:** 12.40 ft.

**Case Size:** 2.0 inch

**DTWTOC:** 5.03 ft.

**vol/ft:** 0.16 gal/ft

**Water Length:** 7.37 ft.

**Case Vol:** 1.18 gal

**Vol x 3 =** 3.54 gal

**Vol x 5 =** 5.90 gal

## **** Purge Monitoring ****

**Purge Method:** PERISTALIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| Pre-Purge | 4.49 | 98600.0 | 11.7 | 6.47 | BROWN | 304.00 | 5.03 | 0.00 | 12:20 |
| A. | 4.32 | 90000.0 | 10.6 | 4.83 | CLEAR | 35.70 | | 1.25 | 12:25 |
| B. | 4.21 | 90000.0 | 10.6 | 1.60 | CLEAR | 16.00 | | 2.50 | 12:30 |
| C. | | | | | | | | | |
| D. | | | | | | | | | |
| Post Purge | 4.06 | 90000.0 | 10.5 | < 0.1 | CLEAR | 12.70 | 6.11 | 3.75 | 12:35 |
| Pre-Sample | " | " | " | " | " | " | " | " | " |
| Sample | | | | | | | | 5.00 | 12:40 |
| Post Sample | 4.13 | 90000.0 | 10.5 | 1.03 | CLEAR | 6.21 | 6.14 | 6.25 | 12:45 |

**Purge End:** 12:35

**Pump:** solnisr-04

**Purge Start:** 12:20

**Bailer:** N/A

**Purge Length:** 15.0 min

**Bailer Seal:** N/A

**Volume Purged:** 3.75 gal

**Purge Rate:** 0.25 GPM

**Weather:** Hot, Still Clear

**Sampling Technicians:** *HM*

**Comments:**

ACCUTEST®

# Monitoring Well Field Sheet

**Date:** *5/19/2011*

**Client:** *Wyeth*

**Well ID:** Well: *F10D-W2BS*

**Location:** *A.H.P.Bound Brook*

| | | | | | |
|---|---|---|---|---|---|
| **Well Depth:** | **42.10** | **ft.** | **Case Size:** | **2.0** | **inch** |
| **DTWTOC:** | **5.61** | **ft.** | **vol/ft:** | **0.16** | **gal/ft** |
| **Water Length:** | **36.49** | **ft.** | **Case Vol:** | **5.84** | **gal** |
| **Vol x 3 =** | **17.52** | **gal** | **Vol x 5 =** | **29.20** | **gal** |

## **** *Purge Monitoring* ****

**Purge Method:** PERISTALIC

| | pH | S. Cond uohms/Con | Temp degree C | D.O mg/L | Color apparent | Turbitity ntu | DTW ft | Vol gal | Time |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| **Pre-Purge** | 6.06 | 64300.0 | 13.5 | 4.14 | BROWN | 84.30 | 5.61 | 0.0 | 12:50 |
| **A.** | 6.31 | 9300.0 | 11.8 | 3.02 | CLEAR | 25.10 | | 7.0 | 13:00 |
| **B.** | 6.16 | 4950.0 | 12.0 | 2.23 | CLEAR | 40.20 | | 14.0 | 13:10 |
| **C.** | | | | | | | | | |
| **D.** | | | | | | | | | |
| | | | | | | | | | |
| **Post Purge** | 6.28 | 4700.0 | 11.8 | 2.35 | CLEAR | 11.60 | 8.14 | 21.0 | 13:20 |
| **Pre-Sample** | 6.30 | 5640.0 | 12.1 | 9.61 | CLEAR | 17.20 | 0:28 | | " |
| **Sample** | | | | | | | | 24.50 | 13:25 |
| **Post Sample** | 6.32 | 5280.0 | 14.0 | 4.23 | CLEAR | 20.80 | 8.17 | 31.50 | 13:35 |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Purge End:** | **13:20** | | **Pump:** | **solnisr-04** |
| **Purge Start:** | **12:50** | | **Bailer:** | **N/A** |
| **Purge Length:** | **30.0** | **min** | **Bailer Seal:** | **N/A** |
| **Volume Purged:** | **21.00** | **gal** | **Purge Rate:** | **0.70** GPM |

**Weather:**

**Sampling Technicians:** *HM*

**Comments:**

**Appendix C**

# Trends Graphs
# (On Attached CD)

**Appendix D**

# Data Validation Review

## Appendix – PFIZER first semi-annual 2011 data review

A limited review of quality control data summary forms was performed for the environmental samples collected on 4/7/11, 4/14/11, 4/26/11, 4/27/11, 4/28/11, 4/29/11, 4/30/11, 5/13/11, 5/18/11 and 5/19/11.

The following is a report on the results of rejected and negated data identified during this limited review. Analyses performed by the laboratory included TCL volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), TAL metals, cyanide, chloride, phenol, total organic halides (TOX), total dissolved solids (TDS), total organic carbon (TOC), Gross Alpha, Gross Beta, Radium 226 and Radium 228 analysis.

One trip blank was provided for each sample set submitted for TCL VOC analysis and sent to the laboratory on 4/7/11, 4/14/11, 4/26/11, 4/27/11, 4/28/11, 4/29/11, 4/30/11, 5/13/11, 5/18/11 and 5/19/11.

A field blank was collected on the sampling days of 4/26/11, 4/27/11, 4/28/11, 4/29/11, 4/30/11, 5/18/11 and 5/19/11. The analyses requested for the field blanks included TCL VOCs, TCL SVOCs, TAL metals, cyanide, chloride, phenol, Gross Alpha, Gross Beta, Radium 226 and Radium 228 analyses.

Field duplicate analyses were collected and analyzed for TCL VOCs, TCL SVOCs, TAL metals, cyanide, chloride, phenol, TOX, TDS, TOC, Gross Alpha, Gross Beta, Radium 226 and Radium 228 analyses.

Summary forms of only quality control data listed in the current New Jersey Reduced Laboratory Data Deliverables guidance and data consistent with previous evaluations were reviewed during data validation. Summary forms for the following parameters were reviewed for chemical analyses (where applicable): method, field and trip blanks, calibrations, internal standard evaluations, GC/MS instrument performance checks, surrogate recovery, serial dilution analysis, laboratory control sample (LCS) analysis, field duplicate analysis, laboratory duplicate analysis, interference check, analysis of matrix spike/matrix spike duplicate (MS/MSD) sets and holding times.

The following parameters were evaluated for radiochemistry analyses (where applicable): holding times, method and field blanks, LCS analysis, MS/MSD analysis, field duplicate analysis, laboratory duplicate analysis, and MS/MSD analysis.

Minor excursions were noted during the data review process for holding time, calibration, surrogate, LCS, MS/MSD, field duplicate and serial dilution excursions.

In addition, the following observations were made pertaining to the sample collection and documentation:

- The sample identifications used by the laboratory were inconsistent with the identifications documented on the chain-of-custody records associated with samples collected 4/30/11 and 4/14/11.

The major excursions that resulted in rejection of sample results, in accordance with NJDEP validation guidance, included the following:

- The results for 2-nitropropane in samples 32R01 5/13/11, TRIPBK01 5/13/11, PZ-12-1U01 5/18/11, PZ-12-1L01 5/18/11, PZ-12-2L01 5/18/11, PZ-12-2U01 5/18/11, PZ-12-3-U01 5/18/11, PZ-12-3L01 5/18/11, PZ-12-3-L02 5/18/11, PZ-12-4U01 5/18/11, PZ-12-4L01 5/18/11, PZ-12-5 U01 5/18/11, PZ-12-6 U01 5/18/11, PZ-12-5 L01 5/18/11, PZ-12-6 L01 5/18/11, 01-MW-1U01 5/18/11, 01-MW-1L01 5/18/11, 01-MW-2 U01 5/18/11, 01-MW-2 L01 5/18/11, 01-MW-3 U01 5/18/11, 01-MW-3 L01 5/18/11, FLOD WIS 01 5/18/11, FIELD BK01 5/18/11, TRIP BK 5/18/11, FLOD W2BS01 5/19/11, FIELD BK01 5/19/11, TRIP BK01 5/19/11, and FLOD W2S 01 5/19/11 were flagged as rejected, R, 64A due to major response factor initial calibration excursions. The laboratory indicated that the low response factor was a result of the quantitation ion used due to a co-eluting target analyte.
- The result for pyridine in sample PW-301 4/26/11 was flagged as rejected R, 88A due to a major LCS recovery excursion.
- The results for benzidine, aniline and pyridine in samples FLOD W2S01 5/19/11, FLOD W2BS01 5/19/11 and FIELD BK 01 5/19/11 were flagged as rejected R, 88A due to major LCS recovery excursions.

Sample results were negated in accordance with NJDEP validation guidelines for the following samples based on concentrations observed in blanks:

- Bis(2-ethyhexyl)phthalate in sample TFP941R 01 4/27/11 and naphthalene in samples AAA 01 4/29/11 and KKK 01 4/29/11 were flagged as negate, 3.
- 2-Chloroaniline in sample PW-3 01 4/26/11 and o-Toluidine in samples PW-3 01 4/26/11, RCRA-D15 02 4/27/11, and RCRA D9 01 4/28/11 were flagged as negate, B, 1.

The following revisions were made during data validation due to excursions identified in the analyses originally reported:

- The following results reported for SVOC analyses were revised by the laboratory due to major surrogate recovery excursions: AAA01 4/29/11, III01 4/29/11, KKK01 4/29/11, 38R01 4/29/11, MW-1A 4/30/11 and MW-22R01 4/30/11. The revised results met validation surrogate recovery criteria.

The remaining minor excursions detected would not require rejection or negation of data based on NJDEP data validation standard operating procedures.

Based on the limited review performed, generally both field and laboratory quality control results indicated that the data produced during the sampling and analysis program, which are presented in this report, are valid.

Considering the complete data set for this investigation, the overall data usability in terms of data that has not been rejected or negated is greater than 95 percent, which meets the criterion of greater than 95 percent usability.

Final review by: _______________ for

Karen Storne
Technical Associate/Data Validator

Date 7/20/11

Appendix E

# Impound 8 Leachate Monitoring Data

# Appendix E
# Leachate Monitoring Results
# Pfizer Inc
# Bound Brook Remediation Program

Cell 1

| Monitoring Date | Average Leachate Detection (Secondary System) Quantity (gpad) |
|---|---|
| January 5, 2011 | 12 |
| January 12, 2011 | 5 |
| January 19, 2011 | 282 |
| January 26, 2011 | 5 |
| February 2, 2011 | 10 |
| February 9, 2011 | 159 |
| February 16, 2011 | 107 |
| February 23, 2011 | 11 |
| March 2, 2011 | 14 |
| March 9, 2011 | 17 |
| March 16, 2011 | 17 |
| March 23, 2011 | 17 |
| March 30, 2011 | 28 |
| April 6, 2011 | 14 |
| April 13, 2011 | 136 |
| April 20, 2011 | 137 |
| April 27, 2011 | 0 |
| May 4, 2011 | 15 |
| May 11, 2011 | 1 |
| May 18, 2011 | 0 |
| May 25, 2011 | 68 |
| June 1, 2011 | 0 |
| June 8, 2011 | 15 |
| June 15, 2011 | 14 |
| June 22, 2011 | 125 |
| June 29, 2011 | 35 |

Source: O'Brien & Gere Engineers, Inc.

# Appendix E
# Leachate Monitoring Results
# Pfizer Inc
# Bound Brook Remediation Program

Cell 2

| Monitoring Date | Average Leachate Detection (Secondary System) Quantity (gpad) |
|---|---|
| January 5, 2011 | 0 |
| January 12, 2011 | 0 |
| January 19, 2011 | 0 |
| January 26, 2011 | 0 |
| February 2, 2011 | 0 |
| February 9, 2011 | 56 |
| February 16, 2011 | 0 |
| February 23, 2011 | 0 |
| March 2, 2011 | 0 |
| March 9, 2011 | 0 |
| March 16, 2011 | 0 |
| March 23, 2011 | 0 |
| March 30, 2011 | 0 |
| April 6, 2011 | 50 |
| April 13, 2011 | 0 |
| April 20, 2011 | 0 |
| April 27, 2011 | 0 |
| May 4, 2011 | 0 |
| May 11, 2011 | 0 |
| May 18, 2011 | 0 |
| May 25, 2011 | 0 |
| June 1, 2011 | 0 |
| June 8, 2011 | 0 |
| June 15, 2011 | 0 |
| June 22, 2011 | 0 |
| June 29, 2011 | 0 |

Source: O'Brien & Gere Engineers, Inc.

**Appendix E**
**Leachate Monitoring Results**
**Pfizer Inc**
**Bound Brook Remediation Program**

Cell 3

| Monitoring Date | Average Leachate Detection (Secondary System) Quantity (gpad) |
|---|---|
| January 5, 2011 | 0 |
| January 12, 2011 | 0 |
| January 19, 2011 | 0 |
| January 26, 2011 | 0 |
| February 2, 2011 | 0 |
| February 9, 2011 | 0 |
| February 16, 2011 | 0 |
| February 23, 2011 | 0 |
| March 2, 2011 | 0 |
| March 9, 2011 | 0 |
| March 16, 2011 | 0 |
| March 23, 2011 | 325 |
| March 30, 2011 | 0 |
| April 6, 2011 | 0 |
| April 13, 2011 | 0 |
| April 20, 2011 | 0 |
| April 27, 2011 | 0 |
| May 4, 2011 | 0 |
| May 11, 2011 | 0 |
| May 18, 2011 | 0 |
| May 25, 2011 | 0 |
| June 1, 2011 | 468 |
| June 8, 2011 | 0 |
| June 15, 2011 | 0 |
| June 22, 2011 | 0 |
| June 29, 2011 | 0 |

Source: O'Brien & Gere Engineers, Inc.

**Appendix E**
**Leachate Monitoring Results**
**Pfizer Inc**
**Bound Brook Remediation Program**

Cell 4

| Monitoring Date | Average Leachate Detection (Secondary System) Quantity (gpad) |
|---|---|
| January 5, 2011 | 0 |
| January 12, 2011 | 0 |
| January 19, 2011 | 0 |
| January 26, 2011 | 0 |
| February 2, 2011 | 0 |
| February 9, 2011 | 0 |
| February 16, 2011 | 0 |
| February 23, 2011 | 0 |
| March 2, 2011 | 0 |
| March 9, 2011 | 0 |
| March 16, 2011 | 0 |
| March 23, 2011 | 0 |
| March 30, 2011 | 0 |
| April 6, 2011 | 0 |
| April 13, 2011 | 78.80 |
| April 20, 2011 | 0 |
| April 27, 2011 | 0 |
| May 4, 2011 | 0 |
| May 11, 2011 | 0 |
| May 18, 2011 | 0 |
| May 25, 2011 | 0 |
| June 1, 2011 | 0 |
| June 8, 2011 | 0 |
| June 15, 2011 | 0 |
| June 22, 2011 | 0 |
| June 29, 2011 | 0 |

Source: O'Brien & Gere Engineers, Inc.

**Appendix F**

# Groundwater Velocity Calculations

# Appendix F - Groundwater velocity calculation

1. Background Information
   K: Hydraulic Conductivity
   $1.52 \times 10^{-3}$ ft/min (previous reports)
   i: Hydraulic Gradient (from contour plan Figure 4-3)
   Eastern side calculated from well RCRA-D1 to RCRA-D6:
   $\frac{28.56 - 24.82}{817} = 0.005$ ft/ft
   Western side calculated from well RCRA-D14 to RCRA-D11:
   $\frac{29.70 - 24.61}{860} = 0.006$ ft/ft
   A: Cross-sectional Area
   Q: Discharge
   V: Specific Discharge
   v: Actual flow velocity
   n: Porosity
   estimated to be 0.10 (from Freeze & Cherry 1979)

2. Darcy's Law
   Q = KiA

3. Dividing (Q) by (A) to obtain specific discharge (V)
   V = Ki

4. To account for porosity, (V) is divided by (n). This is results from the fact that groundwater only flows through pore spaces in the material.

   v = V/n

The following provides the flow calculation for the gradient determined above.

5.

| Eastern Side<br>Groundwater flow from<br>well RCRA-D1 to RCRA-D6 | Western Side<br>Groundwater flow from<br>well RCRA-D14 to RCRA-D11: |
|---|---|
| v = $7.60 \times 10^{-5}$ ft/min | v = $9.12 \times 10^{-5}$ ft/min |
| v = 39.95 ft/yr | v = 47.93 ft/yr |

Appendix G

# Description of Statistical Methods

CYANAMID

RECEIVED
JAN 23 1992
BLASLAND, BOUCK & LEE
NEW JERSEY

To: J. Jerome
Location: Bound Brook
From: P. Fortini
Location: Stamford
Extension: 2685
Date: 21 Jan 1992
Copy to: F. Bruey
C. Costello (BB&L)

Subject: Groundwater Monitoring Statistical Test

Reference: Memo, P.F. to J.J., "Impound 8 detection monitoring program", 2 June 1987.

This note relates to a statistical test recommended (ref.) for comparing indicator parameters for downgradient wells with a set of upgradient wells. Intended to properly account for well-to-well (spatial) variability, the t-test statistic is

$$t_i = (y_i - \bar{x})/s\sqrt{(1 + 1/n)}$$

where $\bar{x}$ and $s$ (with n-1 degrees of freedom) are the average and standard deviation of results for n upgradient wells; and $y_i$ is observed for the i-th downgradient well. Critical values based on Dunnett(1955) were recommended to take account of the multiple comparisons problem, which arises when tests are carried out for several downgradient wells simultaneously.

Critical values for the t-test are required for the case where results from nine downgradient wells are to be compared against the distribution from four upgradient wells. The parameters are slightly outside the range given by Dunnett.

The critical value for the t-test depends on:

- The significance level. We understand that the 0.05 level is to be used.

- The number of degrees of freedom for s. This is n-1 = 3 for four upgradient wells used.

- Whether a one-sided or two-sided test is desired. In a one-sided test, only positive $t_i$ larger than a critical value are statistically significant. In a two-sided test, $t_i$ positive or negative is significant if larger in absolute value than the critical value.

- Whether the multiple comparisons problem is to be taken into account. If not, Student's t critical values apply. However, the expected number of rejections, assuming all k downgradient wells are effectively in the same population as upgradient, will be 0.05*k. Dunnett critical values are intended to control the overall probability of rejection on the assumption of no up- versus down-difference to 0.05. Critical values are percentage points of the distribution of $\max(t_i)$.

- When account of multiple comparisons is to be taken, the number of downgradient wells, k, being compared at one time with upgradients. In the present case, k=9.

- The ratio of numbers of observations for each treatment to the numbers of controls. This is a technical item in the statistical theory. In the present case, the parameter $\rho$ (rho) equals $1/(1+n)$ = 0.2.

We looked into the literature on tabulation of critical values for this test statistic. Dunnett(1955,1964) gives 0.05 level critical values for one and two sided multiple comparisons for $\rho$ = 0.5, degrees of freedom 5 or greater, and k up to 9. Hahn and Hendrickson(1971) give critical values for two-sided tests for values of $\rho$ including 0.2, degrees of freedom 3 or greater, and k up to 20. They do not give values for one-sided tests; the value for two-sided level 0.10 is used below as an approximation to one-sided level 0.05. Bechhofer and Dunnett(1988) is the most recent tabulation. This is not readily available, so has not been consulted.

Critical t values for comparison of nine downgradient with four upgradient wells using $t_i$ (i=1,...,9) as above are as follows. Student's t figures are as commonly tabulated for 3 degrees of freedom and 0.05 significance. Multiple comparisons t figures are from Table 2 of Hahn and Hendrickson(1971), for $\rho$ = 0.2, df = 3, k = 9 (by interpolation between k=8 and k=10).

| | Critical t value for 0.05 significance level | |
|---|---|---|
| | One-sided | Two-sided |
| Student's t: The $t_i$ statistic for each downgradient well is below the critical value with probability 0.95 when $y_i$ comes from the same normal population as $x_1,\ldots,x_4$. | 2.35 | 3.18 |
| Multiple Comparisons t: All $t_i$ statistics for nine downgradient wells are below the critical value with probability 0.95 when $y_1,\ldots,y_9$ come from same normal population as $x_1,\ldots,x_4$. | 4.31* | 5.61 |

* Critical value for 0.10 level two-sided test.

REFERENCES:

C. W. Dunnett (1955), "A multiple comparison procedure for comparing several treatments with a control", J. Amer Statist. Assoc. 50:1096-1121.

C. W. Dunnett (1964), "New tables for multiple comparisons with a control", Biometrics 20:482-491. (supersede table 2a and 2b of the 1955 paper.)

G. J. Hahn and R. W. Robertson (1971), "Distribution of the largest absolute value of k Student t variates and its applications", Biometrika 58:323-332.

R. E. Bechhofer and C. W. Dunnett (1988), "Tables of Percentage Points of Multivariate Student t Distributions" (Selected Tables in Mathematical Statistics, No. 11), Providence, RI: American Mathematical Society.

Peter Fortini

Peter Fortini

*Biometrika* (1971), 58, 2, p. 323
*Printed in Great Britain*



# A table of percentage points of the distribution of the largest absolute value of $k$ Student $t$ variates and its applications

By GERALD J. HAHN and RICHARD W. HENDRICKSON
*General Electric Company, Schenectady, New York*

Summary

A table of $100\gamma\%$ points of the maximum absolute value $|t|$ of the $k$-variate Student $t$ distribution with $\nu$ degrees of freedom and common correlation $\rho$ is given for various values of $k$, $\nu$, $\rho$ and $\gamma$. The application of these tables to problems dealing with the construction of simultaneous confidence and prediction intervals is briefly described.

## 1. Introduction

The multivariate Student $t$ distribution appears to have been first discussed by Dunnett & Sobel (1954, 1955) and by Cornish (1954). In particular, the expression for the $k$-variate Student $t$ probability density function with $\nu$ degrees of freedom is

$$f(t_1, \ldots, t_k; \nu, \mathbf{R}) = \frac{\Gamma\{\frac{1}{2}(k+\nu)\}\,|\mathbf{R}|^{-\frac{1}{2}}}{(\nu\pi)^{\frac{1}{2}k}\,\Gamma(\frac{1}{2}\nu)}\,(1 + \mathbf{t}'\mathbf{R}^{-1}\mathbf{t}/\nu)^{-\frac{1}{2}(k+\nu)},$$

where $\mathbf{t} = (t_1, \ldots, t_k)'$ and $\mathbf{R}$ is a $k \times k$ element correlation matrix. We shall be concerned with the special case where all off-diagonal elements of $\mathbf{R}$ are equal to a constant value $\rho$ and will denote the resulting probability density as $f(t_1, \ldots, t_k; \nu, \rho)$.

This article provides tabulations of percentage points of the maximum absolute value $|t|$ of the $k$-variate Student $t$ distribution with $\nu$ degrees of freedom and common correlation $\rho$, i.e. the tabulated values given here are the solutions $u = u(k, \nu, \rho; \gamma)$ to

$$G(u) = \int_{-u}^{u} \ldots \int_{-u}^{u} f(t_1, \ldots, t_k; \nu, \rho)\, dt_1 \ldots dt_k = \gamma$$

for various values of $k$, $\nu$, $\rho$ and $\gamma$. Application of these tabulations to problems dealing with the construction of simultaneous prediction and confidence intervals are indicated in § 3. Many, but not all, of these applications have been presented previously in the literature.

Some existing specialized tabulations of $u(k, \nu, \rho; \gamma)$ are given by:

(a) Dunn & Massey (1965) for limited values of $k$ and $\nu$;
(b) Dunnett (1964) for $\rho = 0.5$, and $\gamma = 0.95$ and $0.99$;
(c) Pillai & Ramachandran (1954) for $\rho = 0$ and $\gamma = 0.95$;
(d) Steffens (1969) for $k = 2$.

In addition, Dunnett (1964) provided adjustment factors to his tabulations for $\rho = 0.5$ to obtain values of $u(k, \nu, \rho; \gamma)$ for values of $0 \leqslant \rho < 0.5$. These adjustment factors were claimed by Dunnett to provide accuracy to one unit in the second decimal place over the range $0.125 \leqslant \rho < 0.5$ and for the extreme case where $\rho = 0$, to give a value which is too high, but even then by only approximately three units in the second decimal place before rounding. These claims were supported by the results of the computer program described below. In addition, a table of $G(u)$ for various combinations of $k$, $\nu$ and $\rho$ has been developed by Dunn, Kronmal & Yee (1968).

Despite the preceding specialized tabulations, there is, as indicated by Miller (1966, p. 78), a need for more extensive tables. The purpose of the present tabulations is to help satisfy this need. Another related general set of tabulations is that of percentage points of the multivariate $t^2$ distribution given in an unpublished report by P. R. Krishnaiah and J. V. Armitage for all combinations of $k = 1(1)10$, $\nu = 5(1)35$, $\rho = 0{\cdot}05(0{\cdot}05)0{\cdot}9$ and $\gamma = 0{\cdot}90$, $0{\cdot}95$, $0{\cdot}975$ and $0{\cdot}99$. The square roots of these values, which are given to two decimal places, yield values comparable to those given in the present tables.

Companion tables of percentage points of the maximum signed value of the multivariate Student $t$ distribution have previously been given in an unpublished report by P. R. Krishnaiah and J. V. Armitage for all combinations of $k = 1(1)10$, $\nu = 5(1)35$, $\rho = 0{\cdot}0(0{\cdot}1)0{\cdot}9$ and $\gamma = 0{\cdot}90$, $0{\cdot}95$, $0{\cdot}975$ and $0{\cdot}99$. These tabulations have been published in the literature for $\gamma = 0{\cdot}95$ and $\gamma = 0{\cdot}99$ (Krishnaiah & Armitage, 1966) and are applicable for the one-sided analogues of the applications indicated in §3.

## 2. DESCRIPTION OF THE TABLES

Tables 1 to 4 provide tabulations of the factors $u(k, \nu, \rho; \gamma)$ for all combinations of $k = 1(1)6$, 8, 10, 12, 15, 20; $\nu = 3(1)$ 12, 15, 20, 25, 30, 40, 60; $\rho = 0{\cdot}0$ (Table 1), $0{\cdot}2$ (Table 2), $0{\cdot}4$ (Table 3) and $0{\cdot}5$ (Table 4); and $\gamma = 0{\cdot}90$, $0{\cdot}95$ and $0{\cdot}99$. Other values within the range of the tables can be obtained by standard interpolation techniques. A recent paper by Tong (1970) provides a procedure which can be used to obtain conservative estimates of the factors for $k > 20$ using the tabulated factors for $k = 20$. Also, some limiting values as $\nu \to \infty$ are given by Dunn & Massey (1965).

The values of $u(k, \nu, 0{\cdot}5; \gamma)$ in Table 4 for all combinations of $k = 1(1)6$, 8, 10, 12, 15, 20; $\nu = 5(1)$ 12, 15, 20, 30, 40, 60; $\gamma = 0{\cdot}95$ and $0{\cdot}99$ are taken from Dunnett (1964) and are given to two decimal places. The remaining values in Table 4 and all the values in the other tabulations here were obtained using a new computer program and are given to three decimal places.

The basis of the computer program is as follows. The program uses the result (see, for example, Gupta & Sobel, 1957) that, when all off-diagonal elements of the correlation matrix $\mathbf{R}$ are equal to a constant positive value $\rho$,

$$G(u) = \int_0^\infty \left[\int_{-\infty}^{\infty} \left\{\Phi\left(\frac{us+\rho^{\frac{1}{2}}y}{(1-\rho)^{\frac{1}{2}}}\right) - \Phi\left(\frac{-us+\rho^{\frac{1}{2}}y}{(1-\rho)^{\frac{1}{2}}}\right)\right\}^k \phi(y)\,dy\right] g(s;\nu)\,ds,$$

where $\phi(y)$ and $\Phi(x)$ are the probability density and cumulative distribution function respectively of a standard normal variate, and $g(s;\nu)$ is the probability density of $S$, where $\nu S^2$ is a chi-squared variate with $\nu$ degrees of freedom.

The program calculates $G(u)$ using 20 point Gauss–Hermite quadrature to evaluate the inner integral and Gaussian quadrature with 10 points in each of four intervals, 40 points in all, to evaluate the outer integral. The program then obtains $u(k, \nu, \rho; \gamma)$ as the solution to $G(u) = \gamma$ by inverse interpolation. Comparison of the values obtained by this program with those from previous tabulations, where available, indicated close correspondence and, in particular, accuracy to the number of decimal places shown; see Hahn (1970) for further details.

**Table 1.** *$100\gamma\%$ points of the distribution of the largest absolute value of $k$ Student $t$ variates with $\nu$ degrees of freedom and common correlation $\rho = 0{\cdot}0$, i.e. values of $u(k, \nu, 0{\cdot}0; \gamma)$*

| $\nu \backslash k$ | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | $\gamma = 0{\cdot}90$ | | | | | |
| 3 | 2·353 | 2·989 | 3·369 | 3·637 | 3·844 | 4·011 | 4·272 | 4·471 | 4·631 | 4·823 | 5·060 |
| 4 | 2·132 | 2·662 | 2·970 | 3·197 | 3·368 | 3·500 | 3·722 | 3·887 | 4·020 | 4·180 | 4·383 |
| 5 | 2·015 | 2·491 | 2·769 | 2·966 | 3·116 | 3·239 | 3·430 | 3·570 | 3·694 | 3·837 | 4·018 |
| 6 | 1·943 | 2·385 | 2·642 | 2·823 | 2·961 | 3·074 | 3·249 | 3·384 | 3·493 | 3·624 | 3·790 |
| 7 | 1·895 | 2·314 | 2·556 | 2·725 | 2·860 | 2·962 | 3·127 | 3·253 | 3·355 | 3·478 | 3·635 |
| 8 | 1·860 | 2·262 | 2·494 | 2·660 | 2·780 | 2·881 | 3·036 | 3·159 | 3·255 | 3·373 | 3·523 |
| 9 | 1·833 | 2·224 | 2·447 | 2·608 | 2·723 | 2·819 | 2·970 | 3·086 | 3·179 | 3·292 | 3·430 |
| 10 | 1·812 | 2·193 | 2·410 | 2·568 | 2·678 | 2·771 | 2·918 | 3·030 | 3·120 | 3·229 | 3·366 |
| 11 | 1·796 | 2·169 | 2·381 | 2·529 | 2·642 | 2·733 | 2·875 | 2·984 | 3·072 | 3·176 | 3·313 |
| 12 | 1·782 | 2·149 | 2·357 | 2·501 | 2·612 | 2·701 | 2·840 | 2·946 | 3·032 | 3·136 | 3·266 |
| 15 | 1·753 | 2·107 | 2·305 | 2·449 | 2·548 | 2·633 | 2·765 | 2·865 | 2·947 | 3·045 | 3·170 |
| 20 | 1·725 | 2·065 | 2·255 | 2·386 | 2·485 | 2·567 | 2·691 | 2·786 | 2·863 | 2·956 | 3·073 |
| 25 | 1·708 | 2·041 | 2·226 | 2·353 | 2·450 | 2·528 | 2·648 | 2·740 | 2·814 | 2·903 | 3·016 |
| 30 | 1·697 | 2·025 | 2·207 | 2·331 | 2·426 | 2·502 | 2·620 | 2·709 | 2·781 | 2·868 | 2·976 |
| 40 | 1·684 | 2·008 | 2·188 | 2·305 | 2·397 | 2·470 | 2·585 | 2·671 | 2·741 | 2·825 | 2·931 |
| 60 | 1·671 | 1·986 | 2·160 | 2·278 | 2·368 | 2·439 | 2·550 | 2·634 | 2·701 | 2·783 | 2·884 |
| | | | | | | $\gamma = 0{\cdot}95$ | | | | | |
| 3 | 3·183 | 3·960 | 4·430 | 4·764 | 5·023 | 5·233 | 5·563 | 5·812 | 6·015 | 6·259 | 6·507 |
| 4 | 2·777 | 3·382 | 3·745 | 4·003 | 4·202 | 4·366 | 4·621 | 4·817 | 4·975 | 5·166 | 5·409 |
| 5 | 2·571 | 3·091 | 3·399 | 3·619 | 3·789 | 3·928 | 4·145 | 4·313 | 4·447 | 4·611 | 4·819 |
| 6 | 2·447 | 2·916 | 3·193 | 3·389 | 3·541 | 3·664 | 3·858 | 4·008 | 4·129 | 4·276 | 4·462 |
| 7 | 2·365 | 2·800 | 3·056 | 3·236 | 3·376 | 3·489 | 3·668 | 3·805 | 3·916 | 4·051 | 4·223 |
| 8 | 2·306 | 2·718 | 2·959 | 3·125 | 3·256 | 3·365 | 3·533 | 3·660 | 3·764 | 3·891 | 4·053 |
| 9 | 2·263 | 2·657 | 2·885 | 3·046 | 3·171 | 3·272 | 3·430 | 3·552 | 3·651 | 3·770 | 3·923 |
| 10 | 2·228 | 2·609 | 2·829 | 2·984 | 3·103 | 3·199 | 3·351 | 3·468 | 3·562 | 3·677 | 3·823 |
| 11 | 2·201 | 2·571 | 2·784 | 2·933 | 3·048 | 3·142 | 3·288 | 3·400 | 3·491 | 3·602 | 3·743 |
| 12 | 2·179 | 2·540 | 2·747 | 2·892 | 3·004 | 3·095 | 3·236 | 3·345 | 3·433 | 3·541 | 3·677 |
| 15 | 2·132 | 2·474 | 2·669 | 2·805 | 2·910 | 2·994 | 3·126 | 3·227 | 3·309 | 3·409 | 3·536 |
| 20 | 2·086 | 2·411 | 2·594 | 2·723 | 2·819 | 2·898 | 3·020 | 3·114 | 3·190 | 3·282 | 3·399 |
| 25 | 2·060 | 2·374 | 2·551 | 2·673 | 2·766 | 2·842 | 2·959 | 3·048 | 3·121 | 3·208 | 3·320 |
| 30 | 2·042 | 2·350 | 2·522 | 2·641 | 2·732 | 2·805 | 2·918 | 3·005 | 3·075 | 3·160 | 3·257 |
| 40 | 2·021 | 2·321 | 2·488 | 2·603 | 2·690 | 2·760 | 2·869 | 2·952 | 3·019 | 3·100 | 3·203 |
| 60 | 2·000 | 2·292 | 2·454 | 2·564 | 2·649 | 2·716 | 2·821 | 2·900 | 2·964 | 3·041 | 3·139 |
| | | | | | | $\gamma = 0{\cdot}99$ | | | | | |
| 3 | 5·841 | 7·127 | 7·914 | 8·479 | 8·919 | 9·277 | 9·838 | 10·269 | 10·616 | 11·034 | 11·559 |
| 4 | 4·604 | 5·462 | 5·985 | 6·362 | 6·666 | 6·897 | 7·274 | 7·595 | 7·801 | 8·087 | 8·451 |
| 5 | 4·032 | 4·700 | 5·106 | 5·398 | 5·625 | 5·812 | 6·106 | 6·333 | 6·519 | 6·744 | 7·050 |
| 6 | 3·707 | 4·271 | 4·611 | 4·856 | 5·046 | 5·209 | 5·449 | 5·640 | 5·796 | 5·985 | 6·250 |
| 7 | 3·500 | 3·998 | 4·296 | 4·510 | 4·677 | 4·814 | 5·031 | 5·198 | 5·338 | 5·508 | 5·710 |
| 8 | 3·355 | 3·809 | 4·080 | 4·273 | 4·424 | 4·547 | 4·742 | 4·894 | 5·017 | 5·168 | 5·361 |
| 9 | 3·250 | 3·672 | 3·922 | 4·100 | 4·239 | 4·353 | 4·532 | 4·672 | 4·785 | 4·924 | 5·103 |
| 10 | 3·169 | 3·567 | 3·801 | 3·969 | 4·098 | 4·205 | 4·378 | 4·505 | 4·609 | 4·739 | 4·905 |
| 11 | 3·106 | 3·485 | 3·707 | 3·865 | 3·988 | 4·087 | 4·247 | 4·370 | 4·470 | 4·593 | 4·750 |
| 12 | 3·055 | 3·418 | 3·631 | 3·782 | 3·899 | 3·995 | 4·140 | 4·263 | 4·359 | 4·475 | 4·625 |
| 15 | 2·947 | 3·279 | 3·472 | 3·608 | 3·714 | 3·800 | 3·936 | 4·040 | 4·125 | 4·229 | 4·363 |
| 20 | 2·845 | 3·149 | 3·323 | 3·446 | 3·541 | 3·617 | 3·738 | 3·831 | 3·907 | 3·999 | 4·117 |
| 25 | 2·788 | 3·076 | 3·239 | 3·354 | 3·442 | 3·514 | 3·626 | 3·713 | 3·788 | 3·869 | 3·976 |
| 30 | 2·750 | 3·027 | 3·186 | 3·295 | 3·379 | 3·448 | 3·555 | 3·637 | 3·704 | 3·785 | 3·889 |
| 40 | 2·705 | 2·969 | 3·119 | 3·225 | 3·303 | 3·367 | 3·468 | 3·545 | 3·607 | 3·683 | 3·780 |
| 60 | 2·660 | 2·913 | 3·055 | 3·154 | 3·229 | 3·290 | 3·384 | 3·456 | 3·515 | 3·586 | 3·675 |

*Table 2. 100γ% points of the distribution of the largest absolute value of k Student t variates with ν degrees of freedom and common correlation ρ = 0·2, i.e. values of u(k, ν, 0·2; γ)*

| ν \ k | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | γ = 0·90 | | | | | | |
| 3 | 2·353 | 2·978 | 3·347 | 3·607 | 3·800 | 3·967 | 4·216 | 4·405 | 4·557 | 4·739 | 4·969 |
| 4 | 2·132 | 2·653 | 2·958 | 3·172 | 3·337 | 3·470 | 3·676 | 3·833 | 3·960 | 4·112 | 4·303 |
| 5 | 2·015 | 2·482 | 2·753 | 2·943 | 3·089 | 3·207 | 3·390 | 3·530 | 3·642 | 3·778 | 3·948 |
| 6 | 1·943 | 2·377 | 2·627 | 2·802 | 2·937 | 3·045 | 3·213 | 3·342 | 3·446 | 3·570 | 3·728 |
| 7 | 1·895 | 2·306 | 2·549 | 2·707 | 2·833 | 2·935 | 3·093 | 3·214 | 3·313 | 3·439 | 3·577 |
| 8 | 1·860 | 2·255 | 2·481 | 2·638 | 2·759 | 2·856 | 3·007 | 3·122 | 3·214 | 3·326 | 3·408 |
| 9 | 1·833 | 2·217 | 2·435 | 2·586 | 2·702 | 2·793 | 2·941 | 3·053 | 3·141 | 3·248 | 3·384 |
| 10 | 1·812 | 2·187 | 2·399 | 2·546 | 2·658 | 2·749 | 2·889 | 2·997 | 3·083 | 3·187 | 3·319 |
| 11 | 1·796 | 2·163 | 2·370 | 2·513 | 2·623 | 2·711 | 2·846 | 2·952 | 3·036 | 3·138 | 3·266 |
| 12 | 1·782 | 2·143 | 2·346 | 2·487 | 2·594 | 2·680 | 2·814 | 2·916 | 2·998 | 3·097 | 3·222 |
| 15 | 1·753 | 2·101 | 2·295 | 2·429 | 2·531 | 2·613 | 2·741 | 2·837 | 2·915 | 3·009 | 3·128 |
| 20 | 1·725 | 2·060 | 2·245 | 2·373 | 2·470 | 2·548 | 2·669 | 2·761 | 2·835 | 2·923 | 3·036 |
| 25 | 1·708 | 2·036 | 2·217 | 2·341 | 2·435 | 2·510 | 2·627 | 2·716 | 2·787 | 2·873 | 2·981 |
| 30 | 1·697 | 2·020 | 2·198 | 2·319 | 2·412 | 2·485 | 2·600 | 2·686 | 2·756 | 2·839 | 2·945 |
| 40 | 1·684 | 2·000 | 2·174 | 2·293 | 2·383 | 2·455 | 2·566 | 2·649 | 2·717 | 2·798 | 2·900 |
| 60 | 1·671 | 1·981 | 2·151 | 2·267 | 2·354 | 2·424 | 2·532 | 2·613 | 2·679 | 2·757 | 2·859 |
| | | | | | γ = 0·95 | | | | | | |
| 3 | 3·182 | 3·946 | 4·403 | 4·727 | 4·976 | 5·178 | 5·492 | 5·731 | 5·923 | 6·154 | 6·445 |
| 4 | 2·777 | 3·371 | 3·725 | 3·975 | 4·168 | 4·325 | 4·569 | 4·755 | 4·906 | 5·087 | 5·316 |
| 5 | 2·571 | 3·082 | 3·383 | 3·596 | 3·760 | 3·893 | 4·102 | 4·261 | 4·390 | 4·545 | 4·742 |
| 6 | 2·447 | 2·908 | 3·178 | 3·369 | 3·516 | 3·635 | 3·821 | 3·964 | 4·079 | 4·218 | 4·395 |
| 7 | 2·365 | 2·793 | 3·042 | 3·218 | 3·353 | 3·463 | 3·634 | 3·766 | 3·872 | 4·000 | 4·163 |
| 8 | 2·306 | 2·711 | 2·946 | 3·111 | 3·238 | 3·340 | 3·501 | 3·624 | 3·724 | 3·844 | 3·997 |
| 9 | 2·262 | 2·650 | 2·874 | 3·031 | 3·151 | 3·249 | 3·402 | 3·518 | 3·613 | 3·727 | 3·873 |
| 10 | 2·228 | 2·603 | 2·818 | 2·969 | 3·084 | 3·178 | 3·324 | 3·436 | 3·527 | 3·637 | 3·776 |
| 11 | 2·201 | 2·565 | 2·774 | 2·919 | 3·031 | 3·122 | 3·263 | 3·371 | 3·458 | 3·564 | 3·698 |
| 12 | 2·179 | 2·535 | 2·738 | 2·879 | 2·988 | 3·076 | 3·212 | 3·317 | 3·402 | 3·504 | 3·635 |
| 15 | 2·132 | 2·469 | 2·660 | 2·793 | 2·895 | 2·977 | 3·105 | 3·203 | 3·282 | 3·377 | 3·499 |
| 20 | 2·086 | 2·406 | 2·586 | 2·711 | 2·806 | 2·883 | 3·002 | 3·093 | 3·166 | 3·255 | 3·367 |
| 25 | 2·060 | 2·370 | 2·543 | 2·663 | 2·754 | 2·828 | 2·942 | 3·029 | 3·099 | 3·183 | 3·291 |
| 30 | 2·042 | 2·345 | 2·515 | 2·632 | 2·721 | 2·792 | 2·903 | 2·987 | 3·055 | 3·137 | 3·241 |
| 40 | 2·021 | 2·317 | 2·481 | 2·594 | 2·679 | 2·749 | 2·855 | 2·936 | 3·001 | 3·077 | 3·179 |
| 60 | 2·000 | 2·288 | 2·447 | 2·556 | 2·639 | 2·705 | 2·808 | 2·886 | 2·948 | 3·023 | 3·119 |
| | | | | | γ = 0·99 | | | | | | |
| 3 | 5·841 | 7·104 | 7·871 | 8·418 | 8·841 | 9·184 | 9·721 | 10·132 | 10·462 | 10·860 | 11·360 |
| 4 | 4·604 | 5·447 | 5·958 | 6·323 | 6·607 | 6·838 | 7·200 | 7·477 | 7·702 | 7·973 | 8·316 |
| 5 | 4·032 | 4·690 | 5·085 | 5·369 | 5·589 | 5·769 | 6·051 | 6·268 | 6·444 | 6·658 | 6·930 |
| 6 | 3·707 | 4·263 | 4·595 | 4·833 | 5·017 | 5·168 | 5·405 | 5·588 | 5·736 | 5·917 | 6·147 |
| 7 | 3·500 | 3·991 | 4·283 | 4·491 | 4·653 | 4·786 | 4·994 | 5·155 | 5·286 | 5·445 | 5·648 |
| 8 | 3·355 | 3·803 | 4·068 | 4·257 | 4·403 | 4·523 | 4·711 | 4·857 | 4·975 | 5·119 | 5·303 |
| 9 | 3·250 | 3·666 | 3·911 | 4·086 | 4·221 | 4·331 | 4·505 | 4·639 | 4·748 | 4·881 | 5·051 |
| 10 | 3·169 | 3·562 | 3·792 | 3·956 | 4·082 | 4·186 | 4·348 | 4·474 | 4·576 | 4·700 | 4·859 |
| 11 | 3·106 | 3·480 | 3·699 | 3·854 | 3·974 | 4·071 | 4·225 | 4·344 | 4·440 | 4·558 | 4·708 |
| 12 | 3·055 | 3·414 | 3·623 | 3·771 | 3·886 | 3·979 | 4·126 | 4·239 | 4·331 | 4·443 | 4·567 |
| 15 | 2·947 | 3·276 | 3·466 | 3·599 | 3·703 | 3·787 | 3·919 | 4·020 | 4·103 | 4·204 | 4·332 |
| 20 | 2·845 | 3·140 | 3·318 | 3·439 | 3·533 | 3·607 | 3·725 | 3·816 | 3·890 | 3·980 | 4·094 |
| 25 | 2·788 | 3·072 | 3·235 | 3·348 | 3·435 | 3·506 | 3·616 | 3·701 | 3·769 | 3·853 | 3·959 |
| 30 | 2·750 | 3·025 | 3·181 | 3·289 | 3·373 | 3·440 | 3·545 | 3·626 | 3·692 | 3·771 | 3·872 |
| 40 | 2·705 | 2·967 | 3·115 | 3·218 | 3·297 | 3·361 | 3·460 | 3·536 | 3·598 | 3·672 | 3·767 |
| 60 | 2·660 | 2·911 | 3·052 | 3·150 | 3·224 | 3·285 | 3·378 | 3·449 | 3·507 | 3·577 | 3·666 |

Table 8. $100\gamma\%$ *points of the distribution of the largest absolute value of k Student t variates with $\nu$ degrees of freedom and common correlation $\rho = 0{\cdot}4$, i.e. values of $u(k, \nu, 0{\cdot}4; \gamma)$*

| $\nu$ \ $k$ | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | $\gamma = 0{\cdot}90$ | | | | | | |
| 3 | 2·353 | 2·941 | 3·283 | 3·519 | 3·700 | 3·845 | 4·009 | 4·237 | 4·378 | 4·534 | 4·737 |
| 4 | 2·132 | 2·623 | 2·905 | 3·101 | 3·250 | 3·370 | 3·550 | 3·690 | 3·809 | 3·943 | 4·113 |
| 5 | 2·015 | 2·456 | 2·700 | 2·880 | 3·012 | 3·120 | 3·284 | 3·410 | 3·510 | 3·630 | 3·781 |
| 6 | 1·943 | 2·352 | 2·584 | 2·745 | 2·867 | 2·965 | 3·117 | 3·233 | 3·326 | 3·430 | 3·575 |
| 7 | 1·895 | 2·283 | 2·502 | 2·653 | 2·768 | 2·861 | 3·004 | 3·112 | 3·109 | 3·304 | 3·435 |
| 8 | 1·860 | 2·233 | 2·442 | 2·587 | 2·697 | 2·786 | 2·922 | 3·026 | 3·109 | 3·208 | 3·334 |
| 9 | 1·833 | 2·195 | 2·398 | 2·536 | 2·644 | 2·729 | 2·860 | 2·960 | 3·040 | 3·130 | 3·257 |
| 10 | 1·812 | 2·166 | 2·363 | 2·499 | 2·602 | 2·684 | 2·812 | 2·909 | 2·986 | 3·079 | 3·190 |
| 11 | 1·796 | 2·142 | 2·335 | 2·468 | 2·568 | 2·649 | 2·773 | 2·867 | 2·943 | 3·034 | 3·148 |
| 12 | 1·782 | 2·123 | 2·312 | 2·442 | 2·541 | 2·620 | 2·742 | 2·834 | 2·908 | 2·990 | 3·108 |
| 15 | 1·753 | 2·081 | 2·263 | 2·387 | 2·481 | 2·556 | 2·673 | 2·760 | 2·831 | 2·916 | 3·028 |
| 20 | 1·725 | 2·041 | 2·216 | 2·334 | 2·424 | 2·495 | 2·606 | 2·690 | 2·757 | 2·837 | 2·938 |
| 25 | 1·708 | 2·018 | 2·188 | 2·303 | 2·390 | 2·460 | 2·567 | 2·649 | 2·713 | 2·791 | 2·886 |
| 30 | 1·697 | 2·003 | 2·169 | 2·283 | 2·368 | 2·437 | 2·542 | 2·621 | 2·684 | 2·760 | 2·856 |
| 40 | 1·683 | 1·984 | 2·146 | 2·257 | 2·341 | 2·408 | 2·510 | 2·587 | 2·650 | 2·723 | 2·816 |
| 60 | 1·671 | 1·965 | 2·124 | 2·233 | 2·316 | 2·379 | 2·479 | 2·554 | 2·615 | 2·680 | 2·776 |
| | | | | | $\gamma = 0{\cdot}95$ | | | | | | |
| 3 | 3·183 | 3·908 | 4·324 | 4·620 | 4·846 | 5·026 | 5·309 | 5·522 | 5·693 | 5·898 | 6·155 |
| 4 | 2·777 | 3·337 | 3·605 | 3·894 | 4·069 | 4·210 | 4·430 | 4·596 | 4·730 | 4·891 | 5·093 |
| 5 | 2·571 | 3·053 | 3·332 | 3·528 | 3·677 | 3·798 | 3·986 | 4·128 | 4·243 | 4·381 | 4·555 |
| 6 | 2·447 | 2·893 | 3·134 | 3·309 | 3·443 | 3·552 | 3·719 | 3·847 | 3·950 | 4·074 | 4·230 |
| 7 | 2·365 | 2·770 | 3·002 | 3·164 | 3·288 | 3·388 | 3·543 | 3·661 | 3·756 | 3·870 | 4·014 |
| 8 | 2·306 | 2·690 | 2·909 | 3·061 | 3·177 | 3·271 | 3·417 | 3·528 | 3·617 | 3·725 | 3·860 |
| 9 | 2·262 | 2·630 | 2·839 | 2·984 | 3·095 | 3·184 | 3·323 | 3·429 | 3·513 | 3·616 | 3·745 |
| 10 | 2·228 | 2·584 | 2·786 | 2·925 | 3·032 | 3·117 | 3·250 | 3·350 | 3·433 | 3·531 | 3·655 |
| 11 | 2·201 | 2·547 | 2·742 | 2·877 | 2·980 | 3·063 | 3·192 | 3·290 | 3·369 | 3·464 | 3·583 |
| 12 | 2·179 | 2·517 | 2·707 | 2·836 | 2·939 | 3·020 | 3·146 | 3·240 | 3·317 | 3·409 | 3·525 |
| 15 | 2·132 | 2·452 | 2·632 | 2·756 | 2·850 | 2·927 | 3·043 | 3·133 | 3·205 | 3·291 | 3·400 |
| 20 | 2·086 | 2·391 | 2·560 | 2·677 | 2·766 | 2·837 | 2·947 | 3·031 | 3·098 | 3·178 | 3·280 |
| 25 | 2·060 | 2·355 | 2·520 | 2·631 | 2·718 | 2·786 | 2·891 | 2·971 | 3·036 | 3·113 | 3·211 |
| 30 | 2·042 | 2·332 | 2·492 | 2·602 | 2·685 | 2·751 | 2·854 | 2·933 | 2·995 | 3·070 | 3·165 |
| 40 | 2·021 | 2·304 | 2·459 | 2·565 | 2·646 | 2·711 | 2·810 | 2·885 | 2·945 | 3·018 | 3·110 |
| 60 | 2·000 | 2·275 | 2·420 | 2·530 | 2·608 | 2·670 | 2·766 | 2·838 | 2·897 | 2·960 | 3·054 |
| | | | | | $\gamma = 0{\cdot}99$ | | | | | | |
| 3 | 5·841 | 7·033 | 7·740 | 8·240 | 8·623 | 8·932 | 9·414 | 9·780 | 10·074 | 10·428 | 10·874 |
| 4 | 4·604 | 5·401 | 5·874 | 6·209 | 6·467 | 6·675 | 7·000 | 7·249 | 7·449 | 7·688 | 7·991 |
| 5 | 4·032 | 4·666 | 5·024 | 5·284 | 5·485 | 5·649 | 5·903 | 6·090 | 6·258 | 6·442 | 6·682 |
| 6 | 3·707 | 4·235 | 4·545 | 4·764 | 4·934 | 5·071 | 5·285 | 5·449 | 5·582 | 5·742 | 5·940 |
| 7 | 3·500 | 3·967 | 4·241 | 4·436 | 4·583 | 4·704 | 4·893 | 5·038 | 5·155 | 5·297 | 5·477 |
| 8 | 3·355 | 3·783 | 4·031 | 4·207 | 4·343 | 4·452 | 4·624 | 4·755 | 4·861 | 4·990 | 5·154 |
| 9 | 3·250 | 3·649 | 3·879 | 4·041 | 4·167 | 4·268 | 4·427 | 4·549 | 4·647 | 4·766 | 4·918 |
| 10 | 3·169 | 3·546 | 3·768 | 3·916 | 4·036 | 4·129 | 4·277 | 4·392 | 4·484 | 4·596 | 4·739 |
| 11 | 3·106 | 3·466 | 3·671 | 3·817 | 3·929 | 4·019 | 4·160 | 4·269 | 4·357 | 4·463 | 4·598 |
| 12 | 3·055 | 3·400 | 3·598 | 3·737 | 3·844 | 3·931 | 4·060 | 4·170 | 4·254 | 4·350 | 4·484 |
| 15 | 2·947 | 3·263 | 3·444 | 3·571 | 3·668 | 3·740 | 3·859 | 3·963 | 4·039 | 4·131 | 4·247 |
| 20 | 2·845 | 3·136 | 3·301 | 3·415 | 3·504 | 3·574 | 3·685 | 3·769 | 3·837 | 3·921 | 4·030 |
| 25 | 2·789 | 3·063 | 3·219 | 3·327 | 3·410 | 3·477 | 3·581 | 3·660 | 3·725 | 3·802 | 3·900 |
| 30 | 2·750 | 3·016 | 3·166 | 3·270 | 3·349 | 3·415 | 3·514 | 3·590 | 3·650 | 3·720 | 3·820 |
| 40 | 2·705 | 2·959 | 3·103 | 3·202 | 3·277 | 3·337 | 3·433 | 3·505 | 3·562 | 3·639 | 3·722 |
| 60 | 2·660 | 2·904 | 3·040 | 3·134 | 3·207 | 3·264 | 3·358 | 3·421 | 3·477 | 3·542 | 3·628 |

Table 4. $100\gamma\%$ *points of the distribution of the largest absolute value of* $k$ *Student* $t$ *variates with* $\nu$ *degrees of freedom and common correlation* $\rho = 0{\cdot}5$, *i.e. values of* $u(k, \nu, 0{\cdot}5; \gamma)$

| $\nu \backslash k$ | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | $\gamma = 0{\cdot}90$ | | | | | |
| 3 | 2·353 | 2·912 | 3·232 | 3·453 | 3·621 | 3·755 | 3·962 | 4·117 | 4·242 | 4·395 | 4·570 |
| 4 | 2·132 | 2·598 | 2·863 | 3·046 | 3·185 | 3·296 | 3·468 | 3·597 | 3·701 | 3·825 | 3·950 |
| 5 | 2·015 | 2·434 | 2·669 | 2·832 | 2·956 | 3·055 | 3·207 | 3·323 | 3·415 | 3·525 | 3·654 |
| 6 | 1·943 | 2·332 | 2·551 | 2·701 | 2·815 | 2·906 | 3·047 | 3·153 | 3·238 | 3·340 | 3·469 |
| 7 | 1·895 | 2·264 | 2·471 | 2·612 | 2·720 | 2·805 | 2·938 | 3·038 | 3·119 | 3·216 | 3·330 |
| 8 | 1·860 | 2·215 | 2·413 | 2·548 | 2·651 | 2·733 | 2·860 | 2·955 | 3·032 | 3·124 | 3·239 |
| 9 | 1·833 | 2·178 | 2·369 | 2·500 | 2·599 | 2·679 | 2·801 | 2·893 | 2·967 | 3·055 | 3·167 |
| 10 | 1·813 | 2·149 | 2·335 | 2·463 | 2·559 | 2·636 | 2·755 | 2·844 | 2·916 | 3·002 | 3·110 |
| 11 | 1·796 | 2·126 | 2·308 | 2·433 | 2·527 | 2·602 | 2·718 | 2·805 | 2·875 | 2·959 | 3·064 |
| 12 | 1·782 | 2·107 | 2·286 | 2·408 | 2·500 | 2·574 | 2·687 | 2·773 | 2·841 | 2·923 | 3·026 |
| 15 | 1·753 | 2·068 | 2·238 | 2·355 | 2·443 | 2·514 | 2·622 | 2·704 | 2·769 | 2·847 | 2·945 |
| 20 | 1·725 | 2·027 | 2·192 | 2·304 | 2·388 | 2·455 | 2·559 | 2·637 | 2·699 | 2·773 | 2·867 |
| 25 | 1·708 | 2·004 | 2·165 | 2·274 | 2·356 | 2·421 | 2·522 | 2·597 | 2·658 | 2·730 | 2·820 |
| 30 | 1·697 | 1·989 | 2·147 | 2·254 | 2·335 | 2·399 | 2·498 | 2·572 | 2·631 | 2·701 | 2·790 |
| 40 | 1·684 | 1·970 | 2·125 | 2·230 | 2·309 | 2·372 | 2·468 | 2·540 | 2·598 | 2·667 | 2·753 |
| 60 | 1·671 | 1·952 | 2·104 | 2·207 | 2·284 | 2·345 | 2·439 | 2·509 | 2·565 | 2·632 | 2·716 |
| | | | | | | $\gamma = 0{\cdot}95$ | | | | | |
| 3 | 3·183 | 3·867 | 4·263 | 4·538 | 4·748 | 4·916 | 5·176 | 5·372 | 5·529 | 5·718 | 5·953 |
| 4 | 2·777 | 3·310 | 3·618 | 3·832 | 3·995 | 4·126 | 4·328 | 4·482 | 4·606 | 4·752 | 4·938 |
| 5 | 2·57 | 3·03 | 3·29 | 3·48 | 3·62 | 3·73 | 3·90 | 4·03 | 4·14 | 4·26 | 4·42 |
| 6 | 2·45 | 2·86 | 3·10 | 3·26 | 3·39 | 3·49 | 3·64 | 3·76 | 3·86 | 3·97 | 4·11 |
| 7 | 2·36 | 2·75 | 2·97 | 3·12 | 3·24 | 3·33 | 3·47 | 3·58 | 3·67 | 3·78 | 3·91 |
| 8 | 2·31 | 2·67 | 2·88 | 3·02 | 3·13 | 3·22 | 3·33 | 3·46 | 3·54 | 3·64 | 3·76 |
| 9 | 2·26 | 2·61 | 2·81 | 2·95 | 3·05 | 3·14 | 3·26 | 3·36 | 3·44 | 3·53 | 3·65 |
| 10 | 2·23 | 2·57 | 2·76 | 2·89 | 2·99 | 3·07 | 3·19 | 3·29 | 3·36 | 3·45 | 3·57 |
| 11 | 2·20 | 2·53 | 2·72 | 2·84 | 2·94 | 3·02 | 3·14 | 3·23 | 3·30 | 3·39 | 3·50 |
| 12 | 2·18 | 2·50 | 2·68 | 2·81 | 2·90 | 2·98 | 3·09 | 3·18 | 3·25 | 3·34 | 3·45 |
| 15 | 2·13 | 2·44 | 2·61 | 2·73 | 2·82 | 2·89 | 3·00 | 3·08 | 3·15 | 3·23 | 3·33 |
| 20 | 2·09 | 2·38 | 2·54 | 2·65 | 2·73 | 2·80 | 2·90 | 2·98 | 3·05 | 3·12 | 3·22 |
| 25 | 2·060 | 2·344 | 2·500 | 2·607 | 2·688 | 2·752 | 2·852 | 2·927 | 2·987 | 3·059 | 3·150 |
| 30 | 2·04 | 2·32 | 2·47 | 2·58 | 2·66 | 2·72 | 2·82 | 2·89 | 2·95 | 3·02 | 3·11 |
| 40 | 2·02 | 2·29 | 2·44 | 2·54 | 2·62 | 2·68 | 2·77 | 2·85 | 2·90 | 2·97 | 3·06 |
| 60 | 2·00 | 2·27 | 2·41 | 2·51 | 2·58 | 2·64 | 2·73 | 2·80 | 2·86 | 2·92 | 3·00 |
| | | | | | | $\gamma = 0{\cdot}99$ | | | | | |
| 3 | 5·841 | 6·974 | 7·639 | 8·104 | 8·459 | 8·746 | 9·189 | 9·527 | 9·797 | 10·123 | 10·532 |
| 4 | 4·604 | 5·364 | 5·809 | 6·121 | 6·361 | 6·554 | 6·855 | 7·083 | 7·267 | 7·488 | 7·766 |
| 5 | 4·03 | 4·63 | 4·98 | 5·22 | 5·41 | 5·56 | 5·80 | 5·98 | 6·12 | 6·30 | 6·52 |
| 6 | 3·71 | 4·21 | 4·51 | 4·71 | 4·87 | 5·00 | 5·20 | 5·35 | 5·47 | 5·62 | 5·81 |
| 7 | 3·50 | 3·95 | 4·21 | 4·39 | 4·53 | 4·64 | 4·82 | 4·95 | 5·06 | 5·19 | 5·36 |
| 8 | 3·36 | 3·77 | 4·00 | 4·17 | 4·29 | 4·40 | 4·56 | 4·68 | 4·78 | 4·90 | 5·05 |
| 9 | 3·25 | 3·63 | 3·85 | 4·01 | 4·12 | 4·22 | 4·37 | 4·48 | 4·57 | 4·68 | 4·82 |
| 10 | 3·17 | 3·53 | 3·74 | 3·88 | 3·99 | 4·08 | 4·22 | 4·33 | 4·42 | 4·52 | 4·65 |
| 11 | 3·11 | 3·45 | 3·65 | 3·79 | 3·89 | 3·98 | 4·11 | 4·21 | 4·29 | 4·39 | 4·52 |
| 12 | 3·05 | 3·39 | 3·58 | 3·71 | 3·81 | 3·89 | 4·02 | 4·12 | 4·19 | 4·29 | 4·41 |
| 15 | 2·95 | 3·25 | 3·43 | 3·55 | 3·64 | 3·71 | 3·83 | 3·92 | 3·99 | 4·07 | 4·18 |
| 20 | 2·85 | 3·13 | 3·29 | 3·40 | 3·48 | 3·55 | 3·65 | 3·73 | 3·80 | 3·87 | 3·97 |
| 25 | 2·788 | 3·055 | 3·205 | 3·309 | 3·388 | 3·452 | 3·551 | 3·626 | 3·687 | 3·759 | 3·852 |
| 30 | 2·75 | 3·01 | 3·15 | 3·25 | 3·33 | 3·39 | 3·49 | 3·56 | 3·62 | 3·69 | 3·78 |
| 40 | 2·70 | 2·95 | 3·09 | 3·19 | 3·26 | 3·32 | 3·41 | 3·48 | 3·53 | 3·60 | 3·68 |
| 60 | 2·66 | 2·90 | 3·03 | 3·12 | 3·19 | 3·25 | 3·33 | 3·40 | 3·45 | 3·51 | 3·59 |

## 3. Applications of the tabulations

Given below are a number of applications of the tabulations. Further details and numerical examples are given in an unpublished technical report by G. J. Hahn.

### 3.1. *Prediction intervals to contain all of k future means and when the estimate of $\sigma^2$ is pooled from several samples*

A simultaneous $100\gamma$% prediction interval to contain $k$ future observations is an interval which will contain the values of all $k$ such observations with a specified probability $\gamma$. Hahn (1969, 1970) provided tabulations of factors for constructing one-sided and two-sided simultaneous prediction intervals given the values of a past sample of $n$ observations from the same normal distribution. Also, Chew (1968) suggested two approximate procedures for obtaining such intervals.

The percentiles given here can be used to obtain the required factors in the preceding situation. However, they also apply in more general cases where (*a*) one desires simultaneous prediction intervals to contain the means of all of $k$ future samples from the given normal population, where the $i$th sample is based on $m_i$ observations ($i = 1, \ldots, k$); and (*b*) the given information consists of a single sample to estimate $\mu$, but several samples to estimate $\sigma^2$.

In particular, let $Y_1, \ldots, Y_n$ be the known values of $n$ random observations from a normal distribution with mean $\mu$ and standard deviation $\sigma$ and let $\bar{Y}$ denote the mean of the given sample. Also let $S^2$ be an estimate of $\sigma^2$ which is independent of $Y_1, \ldots, Y_n$ such that $\nu S^2/\sigma^2$ follows a chi-squared distribution with $\nu$ degrees of freedom.

Let $\bar{X}_1, \ldots, \bar{X}_k$ be the unknown sample means of $k$ additional samples, based on $m_1, \ldots, m_k$ observations from the same normal distribution, where the $\sum_{i=1}^{k} m_i$ additional observations are independent of one another and are also independent of $\bar{Y}$ and $S^2$. If $m_i = m$ ($i = 1, \ldots, k$), i.e. all future samples are of the same size, an exact two-sided simultaneous $100\gamma$% prediction interval to contain all $k$ future means is

$$\bar{Y} \pm u\{k, \nu, m/(m+n); \gamma\} S\{(1/m) + (1/n)\}^{\frac{1}{2}}.$$

In the general case, where $m_i \neq m$ ($i = 1, \ldots, k$), conservative two-sided $100\gamma$% simultaneous prediction intervals to contain all $k$ future means are

$$\bar{Y} \pm u\{k, \nu, \min_i m_i/(n + \min_i m_i); \gamma\} S\{(1/m_i) + (1/n)\}^{\frac{1}{2}} \quad (i = 1, \ldots, k).$$

The preceding result follows readily from a theorem by Sidak (1968) and is sharper, i.e., leads to shorter intervals, than some approximations previously suggested by Chew (1968). Specifically, Sidak's theorem is as follows. Let $X_1, \ldots, X_k$ be multivariate normal variates with zero means and variances 1 and under probability law $P_{\lambda_1, \ldots, \lambda_k}$ with correlation matrix $(\lambda_i \lambda_j \rho_{ij})$ for $i \neq j$ depending on the $k$ parameters $\lambda_1, \ldots, \lambda_k$, where $0 \leq \lambda_i \leq 1$ ($i = 1, \ldots, k$). Also let $S$ be a positive random variable which is independent of $X_1, \ldots, X_k$. Then

$$P(\lambda_1, \ldots, \lambda_k) = P_{\lambda_1, \ldots, \lambda_k}(X_1/S < u_1, \ldots, X_k/S < u_k)$$

is a nondecreasing function of each $\lambda_i$, $0 \leq \lambda_i \leq 1$ ($i = 1, \ldots, k$). A simpler proof of this theorem than that originally given has since been obtained by Jogdeo (1970).

### 3.2. *Multiple comparison between $k$ treatment means and a control mean*

The problem of the simultaneous comparison of the means of $k$ treatments with that of a control group has been considered by Dunnett (1955, 1964), and the latter reference provides tabulations as described in § 1. In particular, let $\bar{Y}, \bar{X}_1, \ldots, \bar{X}_k$ be independent sample means from a control group and from $k$ treatment groups based upon $n$, $m_1, \ldots, m_k$ independent observations, respectively, from normal distributions with unknown population means $\mu_0, \mu_1, \ldots, \mu_k$, respectively, and a common unknown variance $\sigma^2$. Let $\nu S^2/\sigma^2$ be a chi-squared variate with $\nu$ degrees of freedom that is independent of $\bar{Y}, \bar{X}_1, \ldots, \bar{X}_k$.

Then if $m_i = m$ $(i = 1, \ldots, k)$, i.e. each treatment involves the same sample size, a set of $k$ exact two-sided $100\gamma$% simultaneous confidence intervals to contain the true mean differences between the control group and each of the treatment groups are obtained as

$$(\bar{X}_i - \bar{Y}) \pm u\{k, \nu, m/(m+n); \gamma\} S\{(1/m)+(1/n)\}^{\frac{1}{2}} \quad (i = 1, \ldots, k).$$

In the general case, where $m_i \neq m$ $(i = 1, \ldots, k)$, it follows from Sidak's (1968) theorem that corresponding conservative two-sided $100\gamma$% simultaneous confidence intervals are obtained as

$$(\bar{X}_i - \bar{Y}) \pm u\{k, \nu, \min_i m_i/\min_i (m_i+n); \gamma\} S\{(1/m_i)+(1/n)\}^{\frac{1}{2}} \quad (i = 1, \ldots, k).$$

### 3.3. *Simultaneous confidence intervals to contain all of $k$ population means*

Assume that $\bar{X}_1, \ldots, \bar{X}_k$ are independent sample means based upon $m_1, \ldots, m_k$ independent observations, from $k$ normal populations with unknown means $\mu_1, \ldots, \mu_k$ and unknown common variance $\sigma^2$. Also let $\nu S^2/\sigma^2$ be a chi-squared variate with $\nu$ degrees of freedom that is independent of $\bar{X}_1, \ldots, \bar{X}_k$. Then a set of exact two-sided $100\gamma$% simultaneous confidence intervals to contain all of the $\mu_i$ $(i = 1, \ldots, k)$ is obtained as

$$\bar{X}_i \pm u(k, \nu, 0{\cdot}0; \gamma) S(1/m_i)^{\frac{1}{2}} \quad (i = 1, \ldots, k);$$

see Miller (1966, p. 71). If the correlations between the sample means are not all zero, the preceding expression still applies, but is conservative. This result, too, is a consequence of Sidak's (1968) theorem.

### 3.4. *Simultaneous confidence intervals to contain $k$ regression coefficients*

Let $B_1, \ldots, B_k$ be the least squares estimates of the parameters $\beta_1, \ldots, \beta_k$ in the linear regression model

$$y_i = \beta_1 x_{i1} + \beta_2 x_{i2} + \ldots + \beta_k x_{ik} + e_i \quad (i = 1, \ldots, n),$$

where $y_i$ is the observed value of the dependent variable, $x_{i1} = 1$, $x_{i2}, \ldots, x_{ik}$ are the known values of the $(k-1)$ independent variables and the $e_i$ are independently normally distributed random variables with mean 0 and common variance $\sigma^2$. Also let $\mathbf{X}$ denote the design matrix of the $n$ independent observations with typical element $x_{ij}$ $(i = 1, \ldots, n; j = 1, \ldots, k)$ and let $c^{ii}$ be the $ii$th diagonal element of the matrix $(\mathbf{X}'\mathbf{X})^{-1}$. Finally, let $\nu S^2/\sigma^2$ be a chi-squared variate that has $\nu$ degrees of freedom and which is independent of the $y_i$.

Then two-sided $100\gamma$% simultaneous confidence intervals to contain a subset $K$ consisting of $k'$ of the $k$ regression coefficients are obtained as

$$B_i \pm u(k', \nu, 0{\cdot}0; \gamma) S(c^{ii})^{\frac{1}{2}} \quad (i \in K).$$

These intervals are exact in the special case where the corresponding columns of the design matrix are orthogonal; see Miller (1966, p. 71). For other cases, the preceding simultaneous confidence intervals are conservative, again as a result of Sidak's (1968) theorem.

### 3·5. *Miscellaneous applications of the tabulations*

The following further applications of the tabulations will be mentioned only briefly. Further details are given in the indicated references.

1. The construction of simultaneous confidence intervals to contain any linear combinations of the population means; see Miller (1966, p. 71) and Dunn & Massey (1965).
2. The construction of a confidence band for a regression line over a finite range; see Dunn (1968).
3. The construction of confidence intervals to contain certain interactions in a two-way fixed effects analysis of variance model; see Dunn & Massey (1965).
4. The construction of simultaneous prediction intervals to contain each of $k$ future observations based on a regression analysis.
5. The construction of simultaneous confidence intervals to contain the true regression equation at each of $k$ conditions.

The last two items are discussed in detail in an unpublished technical report by G. J. Hahn.

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*Note added in proof.* Part of the unpublished tables of P. Krishnaiah and J. V. Armitage, mentioned in §1, have since appeared in a book edited by R. C. Bose *et al.* (1970), *Essays in Probability and Statistics*, University of N. Carolina Press.

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*Some key words:* Multivariate $t$ distribution; Simultaneous prediction intervals; Simultaneous confidence intervals; Multiple comparisons.

Appendix H

# Statistical Analysis

**Appendix H - Statistical Analyses**
**Wyeth Holdings Corporation**
**Former American Cyanimid Site**
**Bridgewater, New Jersey**
**Impound 8 Facility Groundwater Program**
**First Half 2011**

**RCRA-D1** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.07 | 1.80 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | -2.316 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D2** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.88 | 1.93 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | 0.778 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D3** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.70 | 1.90 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | 0.123 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D4** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.74 | 1.91 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | 0.270 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D7** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.61 | 1.89 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | -0.211 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D8** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 7.68 | 2.04 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | 3.494 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D9** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 8.30 | 2.12 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | 5.411 | | | | |
| Critical T-value | 5.61 | | | | |

**Appendix H - Statistical Analyses**
**Wyeth Holdings Corporation**
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**First Half 2011**

**RCRA-D10** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.15 | 1.82 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | -1.992 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D11** *pH Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 7.03 | 1.95 | 1.897 | 6.63 | 1.89 |
| RCRA D-6 | 6.62 | 1.89 | | | |
| RCRA D-14 | 6.53 | 1.88 | | | |
| RCRA D-15 | 6.50 | 1.87 | | | |
| Variance | 0.0013 | | | | |
| T-value | -0.136 | | | | |
| Critical T-value | 5.61 | | | | |

**RCRA-D1** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 481 | 6.18 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | 0.036 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D2** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 565 | 6.34 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | 0.223 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D3** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 700 | 6.55 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | 0.471 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D4** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 504 | 6.22 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | 0.091 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D7** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 890 | 6.79 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | 0.749 | | | | |
| Critical T-value | 4.31 | | | | |

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**RCRA-D8** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 428 | 6.06 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | -0.099 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D9** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 413 | 6.02 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | -0.140 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D10** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 331 | 5.80 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | -0.397 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D11** *TDS Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 656 | 6.49 | 6.144 | 396 | 5.98 |
| RCRA D-6 | 1,180 | 7.07 | | | |
| RCRA D-14 | 241 | 5.48 | | | |
| RCRA D-15 | 253 | 5.53 | | | |
| Variance | 0.5960 | | | | |
| T-value | -0.189 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D1** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D2** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D3** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

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**RCRA-D4** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D7** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1.1 | 0.10 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.071 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D8** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D9** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 3.2 | 1.16 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | 5.942 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D10** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D11** *TOC Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.1 | 0.10 | 0.108 | 1 | 0.00 |
| RCRA D-6 | 1.4 | 0.34 | | | |
| RCRA D-14 | 1.0 | 0.00 | | | |
| RCRA D-15 | 1.0 | 0.00 | | | |
| Variance | 0.0252 | | | | |
| T-value | -0.608 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D1** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 677 | 6.52 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | -0.345 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D2** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 900 | 6.80 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | 0.128 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D3** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 950 | 6.86 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | 0.218 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D4** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 945 | 6.85 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | 0.210 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D7** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 1390 | 7.24 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | 0.852 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D8** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 537 | 6.29 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | -0.731 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D9** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 583 | 6.37 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | -0.594 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D10** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 463 | 6.14 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | -0.978 | | | | |
| Critical T-value | 4.31 | | | | |

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**RCRA-D11** *Specific Conductivity Analysis*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 970 | 6.88 | 6.725 | 685 | 6.53 |
| RCRA D-6 | 1,670 | 7.42 | | | |
| RCRA D-14 | 534 | 6.28 | | | |
| RCRA D-15 | 557 | 6.32 | | | |
| Variance | 0.2889 | | | | |
| T-value | -0.326 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D8** *Chloroform*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.00 | 0.00 | 0.347 | 0.26 | -1.35 |
| RCRA D-6 | 1.00 | 0.00 | | | |
| RCRA D-14 | 1.00 | 0.00 | | | |
| RCRA D-15 | 4.0 | 1.39 | | | |
| Variance | 0.4805 | | | | |
| T-value | -2.185 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D8** *Tetrachloroethene*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.00 | 0.00 | 0.904 | 0.49 | -0.71 |
| RCRA D-6 | 1.00 | 0.00 | | | |
| RCRA D-14 | 1.00 | 0.00 | | | |
| RCRA D-15 | 37.2 | 3.62 | | | |
| Variance | 3.2694 | | | | |
| T-value | -0.800 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D10** *Tetrachloroethene*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.00 | 0.00 | 0.904 | 0.29 | -1.24 |
| RCRA D-6 | 1.00 | 0.00 | | | |
| RCRA D-14 | 1.00 | 0.00 | | | |
| RCRA D-15 | 37.2 | 3.62 | | | |
| Variance | 3.2694 | | | | |
| T-value | -1.060 | | | | |
| Critical T-value | 4.31 | | | | |

**RCRA-D8** *Trichloroethene*

| Upgradient Well | Upgradient Conc. | Upgradient Nat. Log | Upgradient Avg. | Downgradient Conc. | Downgradient Nat. Log |
|---|---|---|---|---|---|
| RCRA D-5 | 1.00 | 0.00 | 0.573 | 0.32 | -1.14 |
| RCRA D-6 | 1.00 | 0.00 | | | |
| RCRA D-14 | 1.00 | 0.00 | | | |
| RCRA D-15 | 9.9 | 2.29 | | | |
| Variance | 1.3139 | | | | |
| T-value | -1.336 | | | | |
| Critical T-value | 4.31 | | | | |